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On pages 3, 4 and 5 of this issue of The Journal you will find 55 practical books covering virtually every field in the practice of medicine, surgery and the specialties. In order to cooperate with the postal authorities and to insure delivery in time for Christmas, we urge that you consult this list of Saunders gift suggestions now and place your orders without delay. This will enable us to have your orders packed and labelled—ready for the shipping date.

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THE PROGNOSIS OF ANGINA PECTORIS

A LONG TIME FOLLOW-UP OF 497 CASES, INCLUDING A NOTE ON 75 ADDITIONAL CASES OF ANGINA PECTORIS DECUBITUS

PAUL D. WHITE, M.D.
EDWARD F. BLAND, M.D.
BOSTON
AND
EDWARD W. MISKALL, M.D.
EAST LIVERPOOL, OHIO

Despite the proverbial uncertainty of the outlook for life in the presence of angina pectoris, it is of distinct value in the practice of medicine to have some idea of average expectation in general, as well as at different ages and under various circumstances. It is helpful for the doctor to know something of this, as well as for the patient himself and for his family, rather than to leave merely the impression that prediction is impossible and that the Sword of Damocles may fall at any moment. Such a state of affairs is for many persons so paralyzing that they are prone to sit for many years awaiting the end, unable to carry on a useful or happy life, or else, hardened by the thought, they may lead a reckless existence which can in truth hasten their end.

Routine experience during the last decade having strongly suggested that the classic and often quoted average of five years or less of duration of life after the first attack of angina pectoris was erroneous, and the realization that this error if it exists is a very significant one in clinical medicine, have caused us to make a more complete and longer time follow-up of a larger number of cases of angina pectoris personally observed (P. D. W.) than had previously been carried out. Accordingly we have made a follow-up analysis of the 500 consecutive cases of angina pectoris reported in 1931 by White and Bland.[1] A few observations have been added concerning 75 additional cases of angina pectoris decubitus.

The determination of the average duration of life after the beginning of angina pectoris as found by several observers in the last twenty-five years has presented a gradual increase, as shown in table 1. Herrick and Nuzum [2] in 1918 reported 200 cases. Of the 50 patients who died, the average duration to death was a little less than three years. No data were submitted on their living patients, and the duration of their observation was not stated. Mackenzie [3] found 5.4 years to be the average duration to death of 214 patients he had followed to the end. He had records of 380 patients but no data on living patients were submitted. White [4] in 1926 studied 200 cases observed from 1920 to 1926. In the 66 in which death occurred the average survival period was 3.4 years. Of the 134 patients still living at that time the average duration of the disease was 4.6 years. The average of the dead and the living was 4.2 years. In 1931 White and Bland [1] brought the original 200 up to date and added 300 more, making 500 in all. Two hundred and thirteen were then dead, with an average survival period of 4.4 years. The average duration of the disease in the 273 still living was 5.1 years. Fourteen were untraced. The average duration of the disease in the living and the dead was 4.9 years. The period of observation extended from 1920 to 1931. Eppinger and Levine [5] in 1934 studied 141 fatal cases without stating the duration of the period of their observations. The average duration to death in their cases was 4.57 years.

PRESENT STUDY

In order thus to secure more accurate data concerning the prognosis of angina pectoris than have yet been collected, we have made a new long time follow-up of White and Bland's old group of 500 cases. Every one of these cases has been traced and the present status of each is known. Of the 500 patients 445 are dead and 55 are living. The average duration to death for the 445 was 7.9 years. Three of the 55 living were finally deleted from the series after a careful review of their histories, which revealed a slight question of the accuracy of diagnosis. The average duration of the disease in the 52 living patients is 18.4 years. The average for both the living and the dead is 9.0 years to date (table 2). The duration of observation is from 1920 to 1943. No new cases were added after 1931. After correcting for the 68 dead patients who had symptoms prior to 1920, and for the 2 living patients whose symptoms began prior to 1920, the average duration to death became 7.0 years, and the average duration of the disease in the living became 18.0 years.

It is apparent that a long time follow-up of a large group of patients throughout the entire course of the disease provides the only accurate basis for prognosis. The key to the problem is the prolonged follow-up of all the living patients in any given group starting at

1. White, P. D., and Bland, E. F.: A Further Report on the Prognosis of Angina Pectoris and of Coronary Thrombosis: A Study of 500 Cases of the Former Condition and of 200 Cases of the Latter, Am. Heart J. **7**: 1 (Oct.) 1931.

2. Herrick, J. B., and Nuzum, F. R.: Angina Pectoris: Clinical Experience with 200 Cases, J. A. M. A. **70**: 67 (Jan. 12) 1918.

3. Mackenzie, James: Angina Pectoris, New York, Oxford University Press, 1923.

4. White, Paul D.: The Prognosis of Angina Pectoris and of Coronary Thrombosis, J. A. M. A. **87**: 1525 (Nov. 6) 1926.

5. Eppinger, E. C., and Levine, S. A.: Angina Pectoris: Some Clinical Considerations, with Special Reference to Prognosis, Arch. Int. Med. **53**: 120 (Jan.) 1934.

scratch. Only the continued addition of new patients to the series after the closing of the time interval set for the study can vitiate the results of the long time follow-up. Only one source of error remains and that is the early death of a few patients perhaps in their very first attack of angina pectoris; this is doubtless a small error and one not applicable to a series of patients who actually consult their doctors for this particular trouble.

TABLE 1.—*Comparison of Average Durations in Angina Pectoris as Found by Several Observers*

	Date	No. of Cases	Average Duration: To Death Years	Average Duration: In Living	Average Duration: In Dead and Living	Duration of Observation
Herrick and Nuzum	1918	200	3 (50)	Not stated	...	Not stated
Mackenzie	1923	380	*5.4 (214)	Not stated	...	Not stated
White	1926	200	3.4 (66)	4.6 (134)	4.2	1920-1926
White and Bland	1931	500	4.4 (213)	5.1 (273) (14 untraced)	4.9	1920-1931
White, Bland and Miskall	1943	497	{7.9 (445)} †{7.0 (377)}	{18.4 (52)} {18.9 (50)}	{9.06} {9.00}	1920-1943† (No new cases included since 1931)
Eppinger and Levine	1934	141	4.57 (141)	No living patients studied		

* This figure should be a little higher, since a few cases of myocardial infarction alone were included.

† Sixty-eight of the 445 dead patients had symptoms prior to 1920 totaling 877 years to death; 2 of the living patients had symptoms prior to 1920 totaling 58 years.

One may not justifiably conclude from our findings that people with angina pectoris actually live longer than formerly. In all probability they rather reflect more accurately the situation as regards prognosis that has doubtless always existed and quite possibly indicate also the importance of careful history taking to determine the very first date of the appearance of angina pectoris. It may be true, however that treatment, consisting in the main of more careful living over the periods of greater degrees of coronary insufficiency, may have also exerted a favorable influence.

TABLE 2.—*Duration in Years of Survival in the 497 Cases of This Series*

Years	Dead	Living	Years	Dead	Living
Less than 1	25	0	17 to 18	8	5
1 to 2	28	0	18 to 19	4	5
2 to 3	37	0	19 to 20	0	2
3 to 4	33	0	20 to 21	5	7
4 to 5	25	0	21 to 22	2	3
5 to 6	30	0	22 to 23	4	3
6 to 7	30	0	23 to 24	1	4
7 to 8	26	0	24 to 25	1	0
8 to 9	26	0	25 to 26	2	0
9 to 10	23	0	26 to 27	0	0
10 to 11	16	0	27 to 28	0	1
11 to 12	27	0	28 to 29	1	0
12 to 13	17	0	29 to 30	0	0
13 to 14	24	0	30 to 31	0	0
14 to 15	18	5	31 to 32	0	0
15 to 16	15	5	32 to 33	0	1
16 to 17	17	11			
Total				445	52
Average duration to death (445 cases)				7.9 years	
Average duration in the living (52 cases)				18.4 years	
Average duration in the dead and living (497 cases)				9.0 years	

The same improved outlook in myocardial infarction has been afforded by prolonged follow-up of surviving patients. Table 3 compares the average duration of life as found by various observers. The 32 dead patients of White's [4] group of 62 with myocardial infarction had an average duration to death of 1.3 years. The average duration of survival of the 30 living patients was 2.0 years.

In 1931 White and Bland [1] brought this group of 62 up to date and added 138 patients, making a total of 200. Of the 101 patients who had died, the average duration to death was 1.5 years. In the 94 living patients the average duration of the disease was 3.2 years. This study extended from 1920 to 1931. Ten years later, in 1941, Bland and White [6] followed up this group of 200 and found that for the 171 dead patients the average survival period was 3.4 years. The average for the 29 living patients was 12.0 years. Hence this study extended from 1920 to 1941. No new patients were added after 1931. Levine and Rosenbaum [7] in 1941 studied 372 cases of myocardial infarction. The average duration to death for the 101 dead patients was 3.4 years. The average duration for the 271 living patients was 2.3 years. This short average duration in the living patients is evidently due to the short period of follow-up in the living.

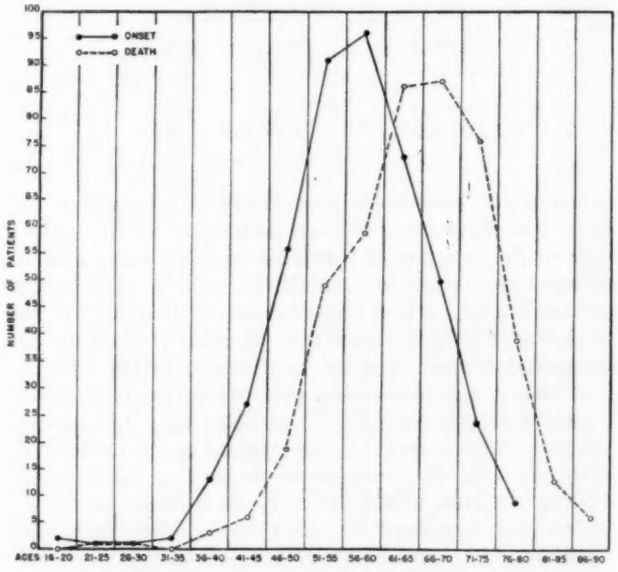

Chart 1.—Frequency distribution curves of ages at onset and of ages at death for the 445 dead patients. The average age at onset, 56.5 years, corresponds roughly with the peak of the curve in the quinquennium 56-60. The average age at death, 65.8 years, corresponds roughly with the peak of the curve of the ages at death in the decade 61-70.

FURTHER DATA CONCERNING OUR 497 CASES OF ANGINA PECTORIS

Table 4 summarizes the data in the current follow-up analysis of our group of 497 patients with angina pectoris. There were 377 males and 120 females. Of the 445 dead patients, 340 were males and 105 were females. The average age at onset for the entire group was 56.5 years. That for the 52 still living was 51 years, while that for 100 patients who died within three years was 59 years. Three hundred and forty (76 per cent) of the 445 deaths were due to cardiac

6. Bland, E. F., and White, P. D.: Coronary Thrombosis (with Myocardial Infarction): Ten Years Later, J. A. M. A. **117:** 1171 (Oct. 4) 1941.

7. Levine, S. A., and Rosenbaum, F. F.: Prognostic Value of Various Clinical and Electrocardiographic Features of Acute Myocardial Infarction: II. Ultimate Prognosis, Arch. Int. Med. **68:** 1215 (Dec.) 1941.

causes—angina pectoris, myocardial infarction, congestive failure. The remaining 105 deaths were due to infections, malignant disease, accidents and other noncardiac causes. The average age at death was 65.8 years.

The distributions of the ages at onset and at death for the 445 dead patients are shown by the frequency distribution curves in chart 1.

In order to evaluate the significance of certain factors that are generally considered important in arriving at some conclusions as regards prognosis, the data obtained on our first examination were assembled (table 5) in three groups: (1) the series of 497 as a whole, (2) 100 patients who died within three years and (3) 52 patients who have lived fourteen years or more. These factors are hypertension, myocardial infarction, cardiac enlargement, abnormal heart sounds, congestive failure and abnormal electrocardiogram. Briefly, the factors named occurred much more frequently in the group that died within three years than they did in the living group of 52 patients. None of the latter group had had congestive failure at the time of our first examination, while 22 (22 per cent) of the group that died within three years had had congestive failure. Eighteen (34.6 per cent) of the living group had normal cardiac examinations (including normal blood pressure and normal electrocardiogram); only 9 (9 per cent) of the group that died within three years had normal examinations. The living group had a much greater incidence of pronounced nervous sensibility than those that survived three years or less. This seemed to indicate that a definite degree of nervous sensibility had a protective function. The more stolid phlegmatic person usually has more disease before he feels it, pays less heed to the subjective manifestations of coronary insufficiency and is more apt to overstep his physical limitations.

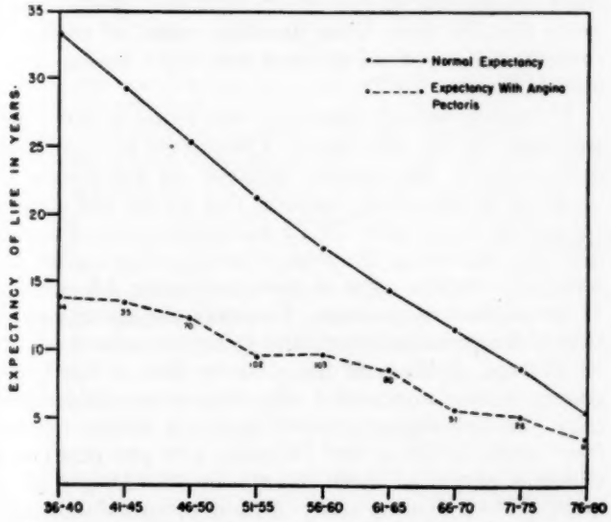

Chart 2.—The expectancy of life for different ages with and without angina pectoris. The ages at onset by quinquenniums are shown along the abscissa. The number of cases of the present series with onset of angina pectoris during each five year age period are recorded along the broken line.

Chart 2 shows the expectancy of life according to age with and without angina pectoris.

NOTE ON ANGINA PECTORIS DECUBITUS

Since angina pectoris decubitus is generally considered to be a symptom of some gravity, one might expect to encounter the highest incidence of this severe form of the disease in the group of 100 patients who survived the shortest period; that is, three years. However, only 23 (23 per cent) of those dying within three years had this type of pain when first seen by us; 103 (20.6 per cent) of the entire group had the decubitus occurrence of pain, while 5 (9.6 per cent) of the 52 living fourteen years or more had this type of pain. On the basis of these figures angina pectoris at rest (somewhat comparable to myocardial infarction itself) would not seem to be incompatible with long life. The average duration of the disease in these 5 patients still living is 18.2 years, which is practically the same as the duration in the entire group of 52 still living. The average duration to death in 98 of the 103 patients who had the decubitus type of pain was 7.6 years. This is only a shade less than the 7.9 years average for the 445 dead patients of the series.

TABLE 3.—*Comparison of Average Durations in Myocardial Infarction as Found by Several Observers*

	Date	Average Duration, Years: No. of Cases	To Death	In Living	In Dead and Living	Duration of Observation
White.....	1926	62	1.3 (32)	2.04 (30)	1.65	1920-1926
White and Bland	1931	200	1.5 (101)	3.2 (94)	2.4 (5 not traced)	1920-1931
Bland and White	1941	200	3.4 (171)	12.9 (29)	4.8	1920-1941
Levine and Rosenbaum	1941	372	3.4 (101)	2.3 (271)	2.6	From less than 1 yr. to more than 10 yrs.

In an additional group of 75 cases of angina pectoris decubitus observed from 1923 to 1943 there were 56 males and 19 females. These data are summarized in table 6. Forty-seven are dead and 28 are living. There are no significant differences in average ages at onset and at death between this group and our old group of 497 cases. The average duration of life after the onset of angina of effort was 5.6 years, but the development of angina decubitus signified that life on the average was thereafter limited to 2.8 years. The follow-up of this group may continue over a considerable number of years, as several patients have been added to it quite recently. We believe that angina decubitus, like angina pectoris of effort, is for the most part an accompaniment of actual coronary occlusion but with a higher degree of coronary insufficiency, just short of gross myocardial infarction and frequently leading to it. Angina pectoris

TABLE 4.—*Summary of Data on the 497 Patients with Angina Pectoris*

	Total (497)	Dead Within 3 Yrs. (100)	Living 14 Yrs. or More (52) (3 deleted)	Total Dead (445)
Sex:				
Male.....	377 (75.9%)	81 (81%)	36 (69.2%)	340 (76.4%)
Female.....	120 (24.1%)	19 (19%)	16 (30.8%)	105 (23.6%)
Age at onset, average....	56.5	59	51	
Limits.....	20-80	24-80	38-72	
Age at death, average...	..	..	..	65.8
				Males, 64.3
				Females, 67.4
Average duration of life.	9.06 (to date)	..	18.4	7.9
				Males, 7.58
				Females, 8.91

decubitus resembles myocardial infarction itself in that it seems to be an acute or subacute condition and not a chronic one that shows little tendency to change from week to week or from month to month. Its greatest hazard, resulting occasionally in sudden unforseen but perhaps preventable death, is undue activity over the

TABLE 5.—*Angina Pectoris: Comparison of Data Obtained on Our First Examination on the Group of 497 Patients as a Whole with Data on 100 Dying Within 3 Years and with Data on 52 Patients Still Living 14 Years or More Since Onset*

	Total (497 Patients)	Dead Within 3 Yrs. (100 Patients)	Living 14 Years or More (52 Patients)
Hypertension	182 (36.6%)	42 (42%)	7 (13.4%)*
Myocardial infarction	205 (41.2%)	54 (54%)	13 (25.0%)
Cardiac enlargement	337 (67.8%)	83 (83%)	21 (40.3%)
Abnormal heart sounds	226 (45.4%)	56 (56%)	15 (28.8%)
Congestive failure	77 (15.5%)	22 (22%)	0
Abnormal electrocardiogram (393 patients were electrocardiographed)	117 (29.7%)	32 (32%)	9 (17.3%)
Normal cardiac examination	74 (18.8%)	9 (9%)	18 (34.6%)
Nervous sensibility pronounced	239 (48.0%)	40 (40%)	34 (65.3%)
Severity of pain:			
Uncertain	13 (2.6%)	4 (4%)	1 (1.9%)
Mild	129 (25.9%)	24 (24%)	21 (40.0%)
Moderate	151 (30.4%)	31 (31%)	19 (38.4%)
Pronounced	104 (20.9%)	18 (18%)	6 (11.5%)
Severe (decubitus)	103 (20.7%)	23 (23%)	5 (9.6%)

* Only 1 patient had blood pressure above 170/110.

few days or weeks during which the angina pectoris occurs at rest, at which time too much effort or excitement is permitted simply because there is no evidence of gross myocardial infarction.

An important consideration with respect to angina pectoris decubitus is the percentage chance of its progressing within a few hours, days or weeks to gross clinical myocardial infarction itself. Such an occurrence took place in 41 (or 54 per cent) of this group of 75 cases (within twenty-four hours in 22 and within three months in 19 more).

SUMMARY AND CONCLUSIONS

1. A follow-up study has been made in 1943 of 497 cases of angina pectoris that were first observed in the years from 1920 to 1930, and a few observations added

TABLE 6.—*Angina Pectoris Decubitus*

75 Additional Cases Observed from 1923 to 1943

	Total	Males	Females	Dead	Living
Number	75	56	19	47	28
Average age at onset of angina of effort or decubitus	57.9	57.1	60.7		
Limits	....	37-79	46-79		
Average age at death	65.9	62.2	68.6		
Limits	....	44-84	52-82		
Average duration to death after development of:					
(1) Angina of effort	5.6	5.2	6.7		
(2) Angina decubitus	2.8	2.4	3.8		

on a supplementary series of 75 cases with angina pectoris decubitus.

2. A comparison of prognosis in angina pectoris and in myocardial infarction by several observers over the past twenty-five years establishes the fact that only by a long time follow-up including the living patients can an accurate basis for prognosis be determined. The present study is the first (so far as we know) to present a large series of cases followed over an adequate length of time.

3. Of the 497 patients with angina pectoris 445 are dead and 52 are still living. The average duration to death of the 445 was 7.9 years, while the average duration from onset of the disease in the living is 18.4 years. The average duration to date for the combined dead and living is 9.0 years, which will ultimately increase when all the present survivors succumb, doubtless to a figure approximating ten years, a duration of life about double that at present widely regarded as the expectation of life after angina pectoris first appears.

4. Seventy-six per cent of the deaths were due to cardiac causes. Approximately one fifth of the entire group had normal cardiac examinations, blood pressures and electrocardiograms at the time of the first examination, and these patients as a rule lived longer. Such factors as hypertension, myocardial infarction, cardiac enlargement, abnormal heart sounds, congestive failure and abnormal electrocardiogram occurred much more frequently in the group that died within three years than in those living fourteen years or more. A pronounced degree of nervous sensibility was a favorable influence.

5. Angina pectoris decubitus was found in 103 (20.6 per cent) of the 497 cases. There were no significant differences in the average duration of the disease to death or in the living between this group and that of the group as a whole. In 75 additional cases of angina pectoris decubitus, life was relatively short after the onset of decubitus type of pain, averaging 2.8 years in 47 cases followed to death. However, the average duration of the precedent angina of effort brought the overall average duration of life close to that of the larger group. Gross myocardial infarction recognizable clinically followed angina pectoris decubitus within twenty-four hours in 22 of the 75 cases (29 per cent) and within a period of three months in 19 (25 per cent) more. The follow-up study of these groups should continue for a considerable period, which will doubtless further affect the prognosis.

6. A very important by-product of our follow-up study is the conviction, previously little more than a suspicion, that coronary heart disease, whether shown by the angina pectoris of temporary coronary insufficiency or by myocardial infarction with subsequent scarring, is actually in major part and in the majority of cases an acute or subacute rather than a chronic disease, though frequently with recurrence. The coronary artery damage may be permanent and therefore chronic, but its effect on the heart itself is the important point; thus coronary disease and coronary heart disease must be clearly differentiated. This conception of the frequent acuteness or subacuteness of coronary insufficiency is a vital one, of tremendous significance both in prognosis and in treatment. It is of course the natural tendency of the heart to establish an adequate collateral coronary circulation that is the answer. Special care over the periods of the acute and subacute phases of coronary heart disease, replacing the old fatalistic point of view, is the most important part of the treatment of coronary heart disease, at times lost to view in the course of the introduction of new therapeutic measures.

PSYCHOGENIC RHEUMATISM

CAPTAIN EDWARD W. BOLAND
MEDICAL CORPS, ARMY OF THE UNITED STATES
AND
COLONEL WILLIAM P. CORR
MEDICAL CORPS, ARMY OF THE UNITED STATES

Psychogenic rheumatism was found to be the most frequent cause of disability in 450 consecutive cases diagnosed as arthritis or an allied organic condition previous to admission to the medical service of Hoff General Hospital.

By the term psychogenic rheumatism is meant those states in which symptoms such as pain, stiffness, subjective sense of swelling or limitation of motion in the muscles or joints are caused, intensified or perpetuated by mental influences. When disability results from such a state in the complete absence of structural joint or muscle abnormalities the condition is designated as "pure" psychogenic rheumatism. When incapacitating psychogenic symptoms are associated with nondisabling organic changes the psychogenic rheumatism is considered to be "superimposed."

We are aware of many of the dangers and pitfalls involved in explaining physical symptoms and more particularly physical signs on a psychogenic basis. Our experience with rheumatic patients in an army general hospital, however, has led us to the opinion that sufficient attention has not been paid to the influence of the emotional factors in the production of somatic symptoms in the musculoskeletal system. This has been made evident by the large number of patients admitted to the arthritis wards with organic diagnoses in which inadequate or no structural changes existed in the muscles or joints. While functional states in the fields of neurology, cardiology and gastroenterology have been increasingly recognized, the concept of psychogenic rheumatism has not been widely appreciated.

Our patients were obtained largely from station hospitals whose policy is to transfer to general hospitals cases refractory to treatment and those which are likely to become chronic. Our statistics, therefore, do not necessarily reflect the incidence of psychogenic rheumatism among soldiers with disabling rheumatic complaints in all army hospitals. Four hundred and fifty consecutive patients admitted with the diagnosis of arthritis and allied conditions, including patients with backache, were classified and analyzed (table 1). Of the wide variety of rheumatic diseases observed, pure psychogenic rheumatism was more often responsible for peripheral joint and muscle symptoms than were any of the commonly recognized disorders including rheumatoid arthritis, osteoarthritis and acute rheumatic fever. It also constituted one of the most frequent reasons for complaints referable to the back. Table 2 indicates that in 1 out of 5 rheumatic patients the symptoms were purely on a psychogenic basis, while 1 out of 7 was disabled by psychogenic factors superimposed on mild organic pathologic changes. Approximately one third of the patients in the entire series were considered incapacitated because of psychic difficulties.

From this group we have undertaken to study, as internists, 50 cases of psychogenic rheumatism in some detail. We have been interested largely in the correlation of such information as might help clinically in evaluating rheumatic complaints rather than in the search for underlying psychologic mechanisms. Patients with rheumatism based on organic disease and with associated mild psychoneurotic symptoms were not included. Only those cases in which psychogenic muscle and joint complaints were sufficiently severe to prevent the satisfactory performance of military service were considered.

From the Medical Service, Hoff General Hospital, Santa Barbara, Calif.

STATISTICAL SURVEY

Classification.—Twenty-eight of the 50 patients had no objective evidence of muscle or joint disease and were regarded as examples of pure psychogenic rheumatism. Eighteen had minor nondisabling structural changes, and 4 patients had a persistence of an incapacity after all physical manifestations of an observed organic process had completely subsided.

TABLE 1.—*Classification of 450 Consecutive Admissions for Arthritis and Allied Conditions*

Peripheral joint complaints			269
Psychogenic rheumatism (pure)		60 (22.3%)	
Rheumatoid arthritis		56 (20.8%)	
Osteoarthritis (primary and secondary)		40 (14.9%)	
Acute rheumatic fever		38 (14.1%)	
Unclassified arthritis		35 (13.0%)	
Rheumatoid ?	11		
Gonorrheal ?	10		
Rheumatic fever ?	7		
Nonspecific synovitis ?	7		
Fibrositis		14 (5.2%)	
Gonorrheal arthritis		8 (3.0%)	
Gout		5 (1.8%)	
Miscellaneous types		13 (4.8%)	
Back complaints			181
Psychogenic rheumatism (pure)		32 (17.7%)	
Unstable back syndromes (strains, congenital anomalies, scolioses, spondylolisthesis)		61 (33.7%)	
Rheumatoid sacroiliitis and spondylitis		33 (18.2%)	
Osteoarthritis		18 (9.9%)	
Fibrositis		12 (6.6%)	
Osteochrondritis juvenilis dorsi		12 (6.6%)	
Ruptured intervertebral disk		13 (7.1%)	
			450

TABLE 2.—*Incidence of Psychogenic Rheumatism*

	Total Cases	Pure Psychogenic Rheumatism	Superimposed Psychogenic Rheumatism	Total
Peripheral joint complaints	269	60 (22.3%)	16 (5.9%)	76 (28.2%)
Back complaints	181	32 (17.7%)	46 (25.4%)	78 (43.1%)
Total cases	450	92 (20.4%)	62 (13.8%)	154 (34.2%)

Miscellaneous Information.—Military service prior to hospitalization ranged in this group from one day to seven years. The average military service was about nine months, and over one third of this time was spent in army hospitals. Nearly 60 per cent had two or more periods of hospitalization before admission to a general hospital. The physical development was considered as average in 25, as inferior in 18 and as superior in 9. In all cases the sedimentation rate was within normal limits. Slightly more than half of these soldiers were married. The incidence of psychogenic rheumatism in enlisted men seems to be unrelated to age, rank, previous occupation, intelligence or education.

Previous History of Rheumatism or Injury.—Thirty-eight patients gave a history of peripheral joint or back symptoms prior to entry into military service. Nineteen of these dated their disability to an injury and 7 gave a clear description of previous inflammatory joint disease. Twelve others claimed to have had a preceding arthritis involving one or more joints, but

their descriptions of the antecedent illnesses were too vague to allow proper evaluation. Five of the 38 patients stated that they were incapacitated at the time of induction.

Family History of Rheumatism.—Twenty patients, or over one third of the series, gave a history of invalidism or semi-invalidism from rheumatism in one or more members of their immediate families. Frequently a parent, a brother or a sister had been crippled with arthritis for years. Occasionally the patient referred his symptoms to the same joint or extremity that was involved in the relative. Several remarked that they suffered from rheumatism and nervousness "just like" their father or mother.

Location of Symptoms.—The sites of election for symptom fixation were predominantly the back and lower extremities (table 3). In 38 of the 50 cases symptoms were limited to these regions. While the lower extremities were involved alone in 11 cases, the upper extremities were the sole site of somatic fixation

TABLE 3.—*Location of Psychogenic Rheumatism in Soldiers*

Back (only)		17
Cervical	0	
Dorsal	5	
Lower	14	
Back (plus)		13
Upper extremities	1	
Lower extremities	10	
Multiple joints	2	
Lower extremities (only)		11
Hip	3	
Knee	10	
Ankle	6	
Foot	3	
Whole leg	7	
Sciatic distribution	2	
Multiple peripheral joints		8
Upper extremities (only)		1
Shoulder	0	
Elbow	0	
Wrist	1	
Hand	1	
		50

in only 1 instance. Complaints were present in practically all joints in 8 cases. There was no striking predilection for psychogenic symptoms to involve the left side in this group. Of the 16 cases showing laterality of symptoms, the involvement was right sided in 7, and left sided in 9.

Emotional Factors.—The majority of patients had definite psychoneurotic manifestations before entry into military service. Seventeen, or approximately one third of the patients, gave a history of disabiling psychoneurotic or hysterical episodes prior to the onset of the presenting complaint. These ranged from attempted suicide to interruptions in schooling because of "nervousness." Many gave a history of enuresis, somnambulism, nightmares, temper tantrums or other symptoms looked on as constituting personality and behavior problems. At the time of examination 28 presented an anxiety state of greater or lesser degree. Sixteen patients showed mild mental depression with anxiety, and in 8 the attitude was that of happy indifference.

Forty-six of the 50 patients had definite associated psychoneurotic symptoms in addition to the rheumatic complaints. Almost all of the common emotional features which characterize the psychoneurotic state were observed in this series. The 4 patients without demonstrable associated psychoneurotic symptoms presented striking incongruities between the organic findings and either the severity or the quality of the complaint. With each patient attempts were made to elicit the immediate precipitating emotional factors incident to the development of the disability, but these efforts were not always successful.

Presenting Disability.—In the peripheral group the most frequent symptoms were pain, stiffness, limitation of motion, subjective sense of swelling and weakness of the involved part. Pain was universally complained of, was usually augmented by some physical activity incident to military service and was often qualitatively of the functional type. Such sensations as numbness, tingling, pricking, weakness, burning, deadness or fulness were frequently interpreted as pain by the patient. Approximately one half of the patients described stiffness and a subjective sense of swelling. Fifteen presented bizarre limps, some associated with abnormal postures which in themselves were sufficient to cause pain and muscle spasm. All the patients with backache complained of pain and stiffness. Frequently the discomfort, after close questioning, became a weakness, a tired feeling, a dead or numb sensation or a localized burning in some region of the back, especially the lumbosacral area. Back rigidity, variable in degree, was common, although true restriction of motion was rare. During the examination it was frequently evident that the apparent immobility was due to pain on forced motion and muscle spasm rather than to structural changes.

By far the outstanding characteristic in the patients with psychogenic backache was the persistence of the disability in spite of prolonged bed rest. Continuous night and day discomfort, refractory to bed rest and physical therapy and augmented by slight physical exertion, was typical. The degree of incapacity may occasionally approach satire, as when a patient with advanced active rheumatoid spondylitis was found pushing another with pure psychogenic backache to the post exchange in a wheel chair. There were 4 examples of camptocormia in the group. Of the entire series 5 cases demonstrated anesthesia or hypesthesia of the hysterical type, and there were 2 cases of associated hysterical paresis of an extremity.

Disposition.—At least 46 of the 50 patients were eventually discharged from military service. Several were given a trial at duty on a limited service status. Except for 4 cases which we have been unable to follow, such experiments have been uniformly unsuccessful. Patients sent to duty returned to the hospital anywhere from four hours to three months with the same or intensified symptoms.

COMMENT

We hold no brief for the concept that organic joint disease, such as chronic rheumatoid arthritis, may result from psychic conflicts.[1] In view of the absence of sound supporting evidence, such a thesis seems entirely unwarranted. While being cognizant of the fact that a psychoneurotic state may be kindled by a chronic illness such as arthritis, we do not support the theory that mental factors are etiologically related to inflammatory joint disease.

1. McGregor, H. G.: Psychological Factor in Rheumatic Disease, J. Roy. Inst. Pub. Health & Hyg. **4**: 169-179 (July) 1941. Weiss, Edward, and English, O. S.: Psychosomatic Medicine, Philadelphia, W. B. Saunders Company, 1943.

Although there are no available statistics to indicate the prevalence of psychogenic rheumatism in the civil population, proper emphasis does not appear to have been placed on the psychic factors which operate in patients with rheumatic complaints. Strecker,[2] in estimating the relative frequency of functional disorders in the various systems, places the musculoskeletal system last on the list. While this may be true in civilian practice, disabling psychogenic complaints as observed in an army general hospital are displayed frequently in the joints and muscles and are comparable to their occurrence in the gastrointestinal and cardiovascular systems. It is of interest that our statistics parallel those compiled by Halliday [3] in compensation insurance cases. He found the disability due to psychogenic factors in 37 per cent of 62 insured patients labeled with the diagnosis of rheumatism.

Without entering into a discussion of the many complex psychologic explanations offered for the localization of psychogenic symptoms, two points are worthy of consideration. First, somatic fixation usually bears an expedient relationship to the attempted solution of an emotional conflict. This may explain the predominant localization of psychogenic musculoskeletal symptoms in the back and lower extremities in soldiers. As these structures are synonymous with marching and soldiering, the development of an infirmity in such parts may be an unconscious attempt to solve the desire for separation from military service. Secondly, localization of fixation is often dependent on a vivid recollection or experience. One third of our patients had glaring examples of arthritic invalidism in their immediate families. Approximately three-fourths gave a recent or remote history of traumatic or inflammatory joint disease in their past lives. In times of great emotional stress these recollections or experiences may act in a persuasive manner to influence the selection of a site for symptom formation. The following cases are illustrative:

A 31 year old private with a profound limp complained of pain and stiffness in the region of the left hip. His first symptoms appeared during the course of an acute anxiety state at about the time of induction. During the succeeding eleven months the disability was progressive and finally he was unable to walk for distances greater than one-half mile. No organic basis for his complaints was demonstrated. His attitude was anxious and tense, and multiple associated minor psychoneurotic symptoms were volunteered. Questioning revealed that in childhood he had been operated on for tuberculous cervical lymphadenitis and subsequently he had feared that the infection might settle in a joint. It seemed significant that he had been reared by an aunt who had been crippled with tuberculous arthritis of the left hip since childhood.

A 24 year old private with approximately one year of service was admitted with the diagnosis of arthritis of the left hip and knee. He complained of pain and stiffness in these joints together with weakness and numbness of the leg. He had a bizarre limp and with each step threw the knee outward. He was resentful for having been drafted and candidly admitted his dislike for military discipline. No organic findings were elicited. Associated psychoneurotic manifestations such as fatigability, nervousness, insomnia, photophobia and sighing respirations were prominent. Three years previously the soldier had developed left leg pain following an injection of bismuth into the "hip." The disability had persisted for a period of four months, but subsequently no further discomfort in the leg had been experienced until the onset of the present disability two weeks after induction.

2. Strecker, E. A.: The Leaven of Psychosomatic Medicine, Ann. Int. Med. **18**: 736-740 (May) 1943.
3. Halliday, J. L.: Psychological Factors in Rheumatism: Preliminary Study, Brit. M. J. **1**: 213 (Jan. 30), 264 (Feb. 6) 1937.

In practically all instances in our series a psychoneurotic predisposition was present, and in over one third of the cases previous incapacitating psychoneurotic episodes had developed during civil life. It is not surprising that such a group should substitute bodily distress for the emotional conflicts growing out of the severe stresses incident to military service and to the transition from civil to army life. The following case is illustrative:

A 37 year old private complained of continuous low back pain. He had been hospitalized for eight of his nine weeks of military service. His discomfort allegedly was so great that he could do nothing which entailed physical activity. His back was held rigid during examination and he complained bitterly of any attempted back motion. His hands and feet dripped with perspiration, and the outstretched fingers were coarsely tremulous. He complained of headache, fatigue and "throbbing eyeballs." Roentgenograms of the spine showed minimal congenital lumbosacral asymmetry. He had sustained a minor back injury in an automobile accident two years prior to induction. Although there had been no head injury at the time, compensation was received for eight months because of a persistent hemianesthesia which included the face and which was demarcated exactly at midline.

The immediate precipitating emotional cause is often difficult to elicit. This is as true in civil life as in military practice. The factors which induce anxiety states in soldiers are manifold. Some are peculiar to military service and include (1) the loss of security or love caused by separation from a wife, family or home, (2) the loss of ability to control one's personal destiny, (3) resentment at authority especially when such is invested in those felt to be inferior, (4) fear of bodily harm, (5) the confusion resulting from strange surroundings, crowding, regimentation and competition, and (6) the concern for the safety and financial well being of dependents. In the following case an exciting emotional factor is illustrated:

A 24 year old corporal with over two years' military service was admitted with the diagnosis of post-traumatic arthritis of the right ankle which allegedly resulted from a minor sprain sustained three months previously. The objective manifestations had entirely disappeared within three weeks, but pain on weight bearing and a pronounced limp persisted. There were no physical or roentgenographic evidences of arthritis. His organization had been placed on alert for embarkation soon after the joint injury was sustained. After repeated questioning it was revealed that the soldier had a deeply rooted fear that insanity would develop if he was subjected to combat. The soldier's father had been confined to a veterans' institution for twenty-five years because of insanity which allegedly resulted from "shell shock" during World War I. The pain and limp completely disappeared within one week after the soldier was assured of separation from military service.

The diagnosis of psychogenic rheumatism is facilitated by the recognition of certain points at the time of examination or during the period of observation. These include (1) gross incongruities between the quality or severity of the symptoms and the structural changes, (2) persistence of the disability, (3) qualitative functional characteristics of the presenting complaint, (4) bizarre postures or limps and (5) the association of other hysterical or psychoneurotic manifestations. The following cases exemplify these factors:

1. *Incongruity between quality and severity of symptoms and structural changes.* A 28 year old private with six weeks of military service was admitted with the diagnosis of arthritis of the right knee. He presented a profound bizarre limp favoring the right leg and complained of a continuous "hurting" in the

right knee. The onset of symptoms was dated to an injury sustained five years previously when he fell from a hay loft. Allegedly he had limped persistently since this injury. The family history revealed that his father was incapacitated because of arthritis and was receiving a disability pension. The patient had been emotionally unstable since childhood and had frequent enuresis until the age of 16 years. He was tense and apprehensive, had cool, moist hands and tremor of the outstretched fingers and of the eyelids, and volunteered a deep anxiety caused by separation from his wife, who was pregnant. On examination the right knee presented no objective abnormalities except perhaps some increase in crepitus on forced motion. The joint was held rigid and the patient cried with pain on attempted manipulation and deep palpation. Roentgenograms revealed minimal osteoarthritic changes on the posterior surface of the patella and some sharpening of the tibial spines. Neurologic examination disclosed a band of complete anesthesia 3 inches in width around the circumference of the knee joint.

2. *Persistence of the disability.* A 24 year old sergeant was admitted with the diagnosis of arthritis of both knees. He had been hospitalized for four months at a station hospital. From the history and records it seemed apparent that the soldier had developed an acute synovitis of both knees which occasioned his entry into the station hospital. At the onset the knees had been swollen, tender and hot, and moderate joint effusion had been present. The sedimentation rate had been 34 mm. in one hour, and on joint aspiration clear amber fluid had been removed. The effusion and inflammatory signs had spontaneously disappeared completely within six weeks. No residual joint deformity or restriction of motion resulted. The sedimentation rate had returned to normal, and repeated roentgenograms of the knees failed to reveal structural joint abnormality. Aching in the knees, at rest as well as on weight bearing, persisted and the patient restricted his walking to the distance from the bed to the toilet. Discomfort was complained of on palpation and on passive motion of the joints. He was restless and irritable and suffered from insomnia. Under observation, a train of associated psychoneurotic symptoms gradually unfolded. In spite of repeated reassurance the soldier persisted in the conviction that he was destined to remain "crippled" and would be of no further useful military service.

3. *Qualitative functional characteristics.* A 42 year old officer was admitted with the diagnosis of osteoarthritis of the spine. He had had no symptoms referable to the back or peripheral joints until three months prior to admission, when he sustained a minor back strain while helping to lift a "jeep." The only immediate discomfort experienced was slight aching and stiffness in the lower part of the back. Roentgenograms of the spine were taken, and subsequently the officer was informed that he was suffering from arthritis. Soon he developed a persistent mid-dorsal and low back pain together with stiffness in the lower back. Examination revealed the back to be objectively normal. The roentgenograms showed the characteristic changes of a mild healed osteochondritis juvenilis dorsi. Detailed questioning revealed that qualitatively the pain consisted of two areas of "burning and tingling," each the size of a 50 cent piece (30 mm.). One was located over the right sacroiliac joint and the other just medial to the angle of the right scapula. Both the stiffness and the "pain" disappeared with simple reassurance.

4. *Bizarre posture.* A 28 year old corporal with eight months of military service was admitted with the diagnosis of severe lumbosacral strain. He complained of continuous mid and lower back pain and a progressive forward bending of the back of four months' duration. He had a hunted look, was tense and presented a myriad of associated psychoneurotic symptoms. Examination revealed a pronounced stoop, the forward bending being from the hips and the trunk being held at about a 120 degree angle. The back was held rigid, the paravertebral muscles were decidedly spastic and any attempt to extend the trunk was exceedingly painful. He could straighten his back perfectly in the recumbent position. The past history and the events leading to the development of the camptocormia can only be sketched. He had spent two years in a penitentiary between the ages of 18 and 21 years because of larceny. After release he held jobs in various states as an oil field worker, was married and had one child. From all available information he had remained a good citizen and had no further police record. In every new location in which he worked his prison record eventually became known. Consequently he had moved from job to job. Two years prior to induction he had injured his back during a fall from an oil derrick. He was hospitalized and received compensation for a period of four months. He had not been incapacitated subsequently but periodically had noted mild low back discomfort and stiffness. On induction into the service he had welcomed the opportunity to make good and finally to get away from his criminal record. He received the rating of corporal after four months and decided to take examinations for Officers' Candidate School. In the course of making such application the question of his penitentiary record came to light. He was bluntly told that an ex-convict could not become an officer, and his prison record became known to other soldiers. The patient became depressed and developed back pain and a progressive forward stoop. With psychotherapy, which included assurance that he would be separated from the service, the posture gradually became normal. Two similar cases of camptocormia were reported from the medical service of this hospital by Hamlin.[4]

5. *Associated hysterical manifestations.* A 34 year old private of American Indian parentage with two years' military service was admitted with the diagnosis of arthritis of the right wrist and fingers. He complained of pain, stiffness, weakness and a sense of swelling in the right wrist and the metacarpophalangeal and proximal interphalangeal joints of the right hand. He had worked as a laborer on road construction in the North Pacific area for several months. After his return to the United States he applied for a furlongh in order to visit his wife, who had been ill. The furlough request was refused, and three days later the disability ensued. His attitude was cheerful and he smiled while complaining of the pain provoked by forced motion of the allegedly involved parts. There was no objective or roentgenographic evidence of joint disease, but neurologic examination revealed a complete anesthesia to pain, temperature and touch of the glove type extending from the finger tips to 4 cm. below the tip of the right shoulder. Reassurance and a promise of furlough brought about considerable improvement in the symptoms. For administrative reasons the furlough was again denied and within forty-eight hours the joint complaints and anesthesia returned to their original intensity.

We agree with Halliday[5] that many patients complaining of stiffness and aching in the muscles and joints who are considered to have fibrositis are actually victims of psychogenic rheumatism. In the light of our experience we find difficulty in accepting the incidence of fibrositis in soldiers as reported by certain English physicians. For example, Copeman[6] reported that, of the first hundred rheumatic cases admitted to a general hospital in France in 1940, 70 per cent were diagnosed as fibrositis. Hutchison[7] studied 78 patients with rheumatic disease admitted to a British military hospital and considered 69.2 per cent to be suffering from fibrositis. These figures are in sharp contrast to those compiled by us (table 1). The diagnosis of primary periarticular or intramuscular fibrositis was made in 5.8 per cent of our cases. We have ventured the diagnosis of fibrositis only when a typical history has been elicited in an emotionally stable individual. In the absence of significant organic changes it is always diffi-

4. Hamlin, P. G.: Camptocormia: Hysterical Bent Back of Soldiers; Report of 2 Cases, Mil. Surgeon **92**: 295-300 (March) 1943.

5. Halliday, J. L.: Concept of Psychosomatic Rheumatism, Ann. Int. Med. **15**: 666-677 (Oct.) 1941.

6. Copeman, W. S. C., cited by Hench, P. S.; Bauer, Walter; Boland, E. W.; Dawson, M. H.; Freyberg, R. H.; Holbrook, W. P.; Key, J. A.; Lockie, Maxwell, and McEwen, Currier: Rheumatism and Arthritis: Review of American and English Literature for 1940, Ann. Int. Med. **15**: 1002-1108 (Dec.) 1941.

7. Hutchison, J. H.: Nonarticular Rheumatism in the Army: Symptomatology, Etiology, Treatment, Glasgow M. J. **137**: 33-42 (Feb.) 1942.

cult to evaluate symptoms of aching and stiffness, especially when these are located in the back. We have considered a more or less typical "jelling" character of these symptoms, i. e. aggravation by periods of physical inactivity, dampness or weather changes and relief by moderate exercise or heat, as necessary criteria. We believe that improper evaluation has often been placed on the fatigue and nervous irritability which is said to accompany fibrositis so frequently. In many instances it is probable that these symptoms are but part of a neurasthenic state in which aching and stiffness serve as the predominant psychogenic manifestations. The evaluation of the patient's emotional make-up, the recognition of associated psychoneurotic complaints and the finding of a precipitating psychogenic factor have aided us in differentiating between fibrositis and psychogenic rheumatism.

One comment that is frequently heard is to the effect that many of these patients are malingerers and should be made to work. Malingering involves the conscious feigning of an illness to avoid duty [8] and as such is punishable in the army by court-martial. In our experience true malingering has been uncommon in contrast to the frequency with which somatic symptoms develop unconsciously as a means of escape from the unpleasant things associated with military service.

Our attempts to salvage these patients with psychogenic rheumatism and to return them to either full or limited duty have been largely unsuccessful. In many instances the only solution rests in the removal of the underlying mental conflict which can be accomplished by separating them from military service. In others the underlying emotional make-up is so poor and the associated psychoneurotic manifestations are so definite that rehabilitation for military service would be neither feasible nor advisable. In certain instances, however, mild somatic symptoms have become intensified and fixed because the psychogenic nature of the illness has not been recognized soon enough. It is hoped that more prompt recognition and proper psychotherapy instead of physical therapy will prevent some of these psychogenic rheumatism casualties.

8. Farrell, M. J., and Kaufman, M. R.: A Compendium on Neuropsychiatry in the Army, Army M. Bull., April 1943, No. 66, pp. 1-112.

Types of Injury Produced by Electric Currents.—It is necessary to differentiate sharply between the forms of electrical energy in studying their effects on the tissues. High frequency alternating currents of different varieties (damped, uniterminal, biterminal and undamped) produce their effects essentially through the production of heat in the electrical field. The effect varies with the character of the current. Passage of the current may produce only a moderate rise in the temperature of the field without permanent injury to the tissues (diathermy). The temperature of the whole body may be elevated in this way through the distribution of the heat so generated throughout the body by the circulating blood and tissue fluids. Currents of high frequency, but otherwise of a different character, are capable of destroying tissue, a principle applied in surgery in the use of the electric knife. Currents of this type, through the passage of electrical discharges from suitably shaped electrodes, produce (1) complete disruption of tissue through molecular changes as in fulguration, (2) a peculiar dehydration of the tissues through what is called desiccation or (3) a complete death of the tissue through its coagulation and (4) a knifelike severance of the tissues spoken of by some as acusection. All these therapeutic forms of electric energy have their virtues and their faults, which must be read about in treatises on electrotherapy and clinical surgery.—Forbus, Wiley D.: Reaction to Injury, Baltimore, Williams and Wilkins Company, 1943.

PREFRONTAL LOBOTOMY IN CHRONIC SCHIZOPHRENIA

A. E. BENNETT, M.D.
J. J. KEEGAN, M.D.
AND
C. B. WILBUR, M.D.
OMAHA

The operation of prefrontal lobotomy for certain mental disorders was introduced by Egas Moniz [1] of Lisbon, Portugal, in 1936. He published results in 20 cases, of which 7 were classed as recovered, 7 as improved and 6 as not benefited. The best results appeared in cases of depression, the poorest in schizophrenia.

Freeman and Watts,[2] who introduced the procedure in this country in 1936, deserve the credit for the development of current interest in this method. Since 1936 the procedure has been tried by Tarumianz,[3] Strecker, Grant and Palmer,[4] Lyerly,[5] Love, Schrader,[6] Peterson and Buchstein,[7] among many. They have reported on a fairly large number of different psychotic states.

One of the most encouraging reports was made by Strecker, Grant and Palmer [4] in 5 cases of chronic schizophrenia, not one of which had been benefited by years of previous therapies. The authors noted removal of emotional charge and definite change in behavior in all patients.

Schrader [6] reported 58 cases in a state hospital, mostly of chronic schizophrenia. He obtained good results in 30, in 26 of which paroles from the institution were granted. The best results were obtained in the paranoid patients.

Freeman and Watts [2] operated on 12 patients with schizophrenia and obtained good results in 5, improvement in 5 others and no response in the other 2. Of this group 3 became regularly employed, 3 were employed part time, 3 were able to live at home and 1 remained institutionalized.

Peterson and Buchstein [7] recently reported 25 cases of schizophrenia of long duration in state hospitals; remarkable improvement occurred in 12 of these, slight improvement in 11, no improvement in 1, and there was 1 fatality.

Ziegler [8] has compiled from questionnaires a survey of all available cases. His analysis is given in the accompanying table.

Although good results from this operation have been reported in the psychoneuroses and affective disorders, we feel that this radical treatment is not indicated at present in these functional emotional states, with the possible exception of chronic disabling obsessive

Read before the Douglas County Medical Society, Jan. 12, 1943.
From the Department of Neuropsychiatric Research, Bishop Clarkson Memorial Hospital.

1. Egas Moniz: Tentatives opératoires dans le traitement de certaines psychoses, Paris, Masson & Cie, 1936.
2. Freeman, Walter, and Watts, J. W.: Prefrontal Lobotomy in Agitated Depression: Report of Case, M. Ann. District of Columbia **5**: 326 (Nov.) 1936; Prefrontal Lobotomy in the Treatment of Mental Disorders, South. M. J. **30**: 23 (Jan.) 1937.
3. Tarumianz, M. A., in Twenty-Sixth Biennial Report of the State Board of Trustees of the Delaware State Hospital, Wilmington, 1941.
4. Strecker, E. A.; Grant, F. C., and Palmer, H. D.: Study of Frontal Lobotomy: Evaluation of Neurosurgical and Neurological Features in Five Closely Observed Psychotic Patients, Am. J. Psychiat. **98**: 524 (Jan.) 1942.
5. Lyerly, J. G.: Transsection of the Deep Association Fibers of the Prefrontal Lobes in Certain Mental Disorders, South. Surgeon **8**: 426 (Oct.) 1939.
6. Freeman, Walter, and Watts, J. W.: Psychosurgery, Springfield, Ill., Charles C Thomas, Publisher, 1942.
7. Peterson, M. C., and Buchstein, H. S.: Prefrontal Lobotomy in Chronic Psychoses, Am. J. Psychiat. **99**: 426 (Nov.) 1942.
8. Ziegler, L. H.: Personal communication to the authors.

compulsive states. The present therapy of affective disorders by means of combined psychiatric and convulsive shock therapy is effective. Psychoneurotic states usually respond favorably to psychotherapy. Lobotomy is a radical procedure that can hardly be considered a cure. Definite change in personality does occur after lobotomy. The patient becomes more extravertive, less self conscious and no longer aggressive and responsive to abnormal emotional drives, thus becoming a socially acceptable individual. But he cannot be said to be cured of the psychosis. We should therefore reserve the operation for chronic and apparently permanent institutional patients in whom any improvement is pure gain and the procedure, even with its hazards, seems justifiable. We have therefore considered its possible application only to improving personality reactions of chronic schizophrenic patients for whom all previous therapies have failed.

The mortality of various groups reported to date has been from 1 to 10 per cent. Operative hemorrhage has been the usual cause of death. Increased experience has lowered the rate, which need never be high. Complications have been frequent, such as persistent incontinence, convulsive states (10 per cent), aphasias and postoperative hemiplegias.

Survey of Bilateral Prefrontal Lobotomies

Reported from Seventeen Different Clinics in United States and Canada on Patients with a Variety of Psychiatric Reaction Types, Schizophrenia Predominating

January–March 1943	
1. Number operated on	582
2. Died as a result of the operation	11
3. Died subsequently to the operation	16*
4. Rendered clinically worse after the operation than before	8
5. Clinically unimproved after the operation	60
6. Clinically slightly improved after the operation	111
7. Clinically much improved after the operation	192
8. Recovered after operation; psychotic or neurotic symptoms disappeared	184
9. Number of patients known to be in the hospital now (some able to work)	265
10. Number known to be outside the hospital but unable to work	55
11. Number known to be outside the hospital, working part or full time	235

* One from suicide.

Survey made by Lloyd H. Ziegler, M.D., medical director, Milwaukee Sanitarium, Wauwatosa, Wis.

The modus operandi of the procedure is still not adequately understood. Beneficial results possibly occur from section of the anterior thalamic radiation from the medial dorsal nucleus of the thalamus to the frontal poles. These fibers may supply affective tone to intellectual experience, and their severance may break the link between emotion and imagination.

After lobotomy a pronounced change in the patient's personality occurs. Freed of anxiety and obsessive thinking and released from feelings of inferiority, he feels un-self conscious and is able to turn his interests outward. He responds quickly to external impressions, is usually euphoric, gets along superficially with everybody and is childlike and cheerful. Intellectually the patient retains all past memories but cannot project himself into the future. He loses ambition and is satisfied with day to day living. The lobotomized individual is friendly, good natured and indifferent to others' opinions, yet expresses himself freely. Malice and aggressiveness are lacking. He responds well to frustration; although easily angered, he calms down readily. Delusions and hallucinations may persist, but he does not spontaneously bring them out or react to them. He makes decisions quickly and enjoys simple pleasures. He ignores criticism of others, harbors no grudges and has no worries.

THE TECHNIC OF PREFRONTAL LOBOTOMY

In the original operation Egas Moniz [9] injected small amounts of alcohol into the white matter of the prefrontal region through a trephine located 3 cm. in front of a vertical line between the ears and 3 cm. on each side of the midline of the skull. He used a special instrument, called the leucotome, which cut a localized core of white matter in different regions of the prefrontal lobes. This technic left a considerable amount of completely devascularized white brain tissue to undergo degeneration and gliosis.

Freeman and Watts,[6] who introduced the Egas Moniz technic into this country in 1938, later changed the technic to a simple dull blade incision (Killian periosteal elevator) through a lateral trephine 6 cm. above the zygoma and 3 cm. behind the anterior rim of the orbit (fig. 1). This technic and approach were designed to avoid much devascularization of tissue and postoperative complications of serious hemorrhage, paralysis and convulsions (fig. 2). Freeman emphasized passing the blade of the knife in the plane of the coronal suture, not in a vertical line, to avoid complications and to include the precise amount of prefrontal lobe.

However, this method of entrance seemed dangerously close to the motor cortex of the face, particularly to Broca's motor speech center on the left side. Careful anatomic study of Lyerly's [10] approach showed its place of entrance, 4 cm. lateral from the midline, to be well located in order to avoid a fissure and cerebral vein commonly located at the 3 cm. distance. This entrance into the frontal lobe is approximately 3 cm. anterior to the arm motor cortex, so that superficial adhesions or gliosis should be less likely to produce postoperative convulsions.

The place of the brain incision, determined by insertion of a ventricular needle before the knife blade is entered, passes just in front of the anterior horn of the lateral ventricle. This prevents the blade from entering the ventricle or injuring the caudate nucleus or anterior perforated space. The depth of safe insertion depends somewhat on the shape of the frontal lobe; but 5.5 to 6 cm., the depth used, will not reach the floor of the frontal fossa in an adult. A small incision is made over a convolution in the arachnoid. The dull blade is inserted and passed medially and laterally to near the limits of the frontal lobe. Resistance of white brain tissue is not great, whereas greater resistance of pia-arachnoid and larger superficial cerebral vessels can be detected before they are torn. From each lateral limit of this incision the blade is drawn upward as it is more angulated out. The complete incision by this technic is illustrated in figure 2, drawn from lobes cut off in the plane of the lobotomy incision. Bleeding from the incision is not great and soon stops after the knife is turned crosswise a few times in different regions to permit escape of blood. The scalp wound is then closed with fine silk.

The most important white fibers cut by prefrontal lobotomy comprise the frontothalamic radiation which enters the dorsal medial thalamic nucleus. Some degeneration of this nucleus occurs after the section,

9. Egas Moniz: Les premières tentatives opératoires dans le traitement de certaines psychoses, Encéphale **31**:1 (June) 1936.

10. Lyerly, J. G.: Prefrontal Lobotomy in Involutional Melancholia, J. Florida M. A. **25**:225 (Nov.) 1938.

but there is not much degeneration of the cerebral cortex; and it is doubtful whether section of shorter association fibers in the prefrontal lobe is a factor in mental changes following lobotomy. Considerable substitution of function must be possible.

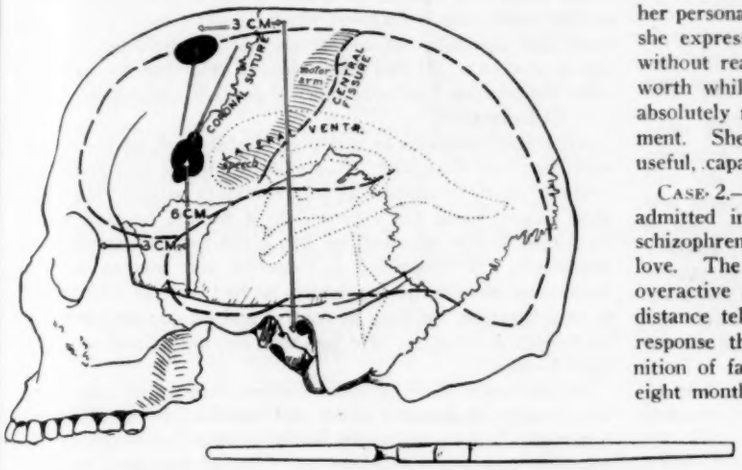

Fig. 1.—Lateral aspect of skull, showing coordinates for making burr holes. (Modified from Freeman and Watts.*)

The risks of the operation are not great if the procedure is done properly. The simple insertion of the blade through a small cortical incision well in front of the motor cortex and the transverse section of white brain tissue should cause little hemorrhage or scar formation. Serious complications of hemorrhage or later convulsions cited in the literature are probably related to early faulty technics.

REPORT OF CASES

The following 5 cases of chronic schizophrenia illustrate the type of patient and the kind of personality change observed after the operation:

CASE 1.—*History.*—B. McC., a woman aged 52, single, a school teacher, admitted in October 1941 after an illness of nine years, had schizophrenia of the paranoid type.

The patient was first taken ill while teaching. The superintendent of schools noted her peculiar actions in the classroom and among teachers. She felt that people had dual personalities which changed from minute to minute (Jekyll-Hyde). She began to have ideas that the board of education was trying to take away her job. The patient's brother and sister said she was worrying over $1,500 owed her by the board of education.

The patient accused people of stealing her clothing before her eyes and trying to blind her by putting poisonous substances into her eyes. After she was brought to her mother's home she continued to hold the same ideas. Three months later, while cutting dandelions with a knife, she dashed, knife in hand, into the street after her nephew. The patient later said she was afraid he might be run over. However, neighbors called the authorities, who took her to a state hospital. She remained there for six years except for a parole of five months in 1935 without improvement. She was aggressive, uncooperative and extremely paranoid; frequently she was so disturbed that she had to be secluded or given sedatives.

On admission to Clarkson Hospital in October 1941 she was restless and resentful of hospitalization. She was extremely hostile and suspicious, cursed the personnel and talked incessantly, verbalizing numerous paranoid ideas. She was unable to talk sensibly, lacked insight and judgment, and wrongly accused patients in the state hospital of deliberately mistreating her. No benefit was obtained from twelve curare-electric shock treatments. In November 1941 a lobotomy was performed.

Postoperative Course.—The patient was untidy at first. Her belligerent and spiteful remarks changed to sarcastic and witty ones. She was discharged fifteen days after lobotomy in a manageable condition.

Present Status.—She lives at home with her sister and has done some part time teaching. She is pleasant, is careful of her personal appearance and loves to go to movies. Occasionally she expresses previous ideas about the duality of people, but without reaction. Relatives feel that results in this case were worth while. Fortunately she has good supervision. She has absolutely no insight but is able to make a good social adjustment. She has been spared institutional life and is a fairly useful, capable person.

CASE 2.—S. K., a woman aged 25, single, unemployed, admitted in March 1942 after an illness of four years, had schizophrenia of the hebephrenic type after a disappointment in love. The patient at first did not sleep well, then became overactive and sang and talked constantly, engaging in long distance telephone conversations without regard to cost. Her response then changed to silence and stupor without recognition of family. She attempted suicide and sororicide. After eight months in a hospital, the last six in a state hospital, she was discharged as cured, following a course of forty-five insulin shock treatments.

On return home the patient, apparently normal, soon became obstreperous, fought for things and even attacked her brother physically.

She was returned to the state hospital, where more insulin shock treatments and a course of metrazol treatments were ineffective. She was overactive, aggressive, profane and obscene. She was transferred to Clarkson Hospital, where she was given twelve insulin shocks and four curare-electric shock treatments without improvement.

On admission to Clarkson Hospital the patient was quiet. Her speech was rapid without expression even when she announced that she had just drunk poison. She showed no fear, anxiety or bewilderment but rather tried to confound the examiner. She used clothing and bedding decoratively but was not destructive. Her speech was spontaneous and unrestrained, with attempts at rhyming, her talk overproductive and jumbled, thus: "Poey-poey on luey. Why don't you go to hell? I can't eat no meat. I don't want your ankles. I said that was Tuxedo Junction—I'm a woman and a half. My home is in Sing Sing—I'm Paul Mark, disgusting, poey, poey on luey. I've got to look out for bedbugs. This is Clarkson Hospital. . . . I wasn't born in this world. . . . I came and bought it in the dime store. Nothing 10 cents. Six. I came here at 9 this morning. From Whiting, Indiana . . . turn off the machinery. Did you swallow your anacin? You'll kiss my strychnine poisoning. . . . I don't want anything to drink, no thanks. I don't want water (drinking it all without urging). It's poison. Do you have cherry too? Sour. My stomach. . . . I'm a doctor. Poey. God damn your humerus, I

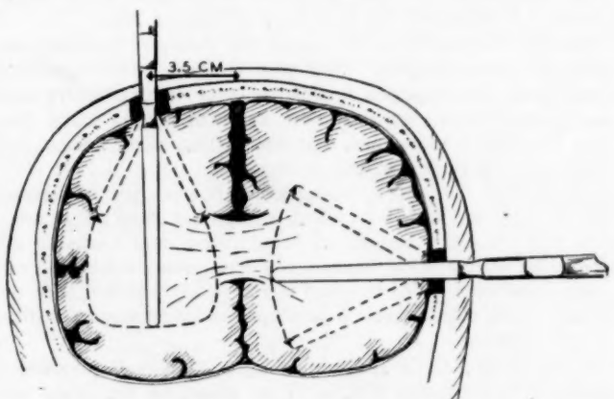

Fig. 2.—Manner of incising white matter of frontal lobe. (Modified from Freeman and Watts.*)

own the business now. Why don't you try cherry? I hate bananas. I love observations. . . . I thought Mr. Moore was the guy. My kidneys. Dry up and blow away. Now my heart needs medicine."

A lobotomy was performed in April 1942. In the postoperative course at first the patient was untidy and excreta careless. Later she took part in some ward activities, did neat embroidery and began to use makeup and pay attention to her appearance. She associated well with other patients and played cards. Her answers to questions were pleasant and sometimes jocular.

At present she lives at home, doing housework and some embroidery. About once a week she has outbursts of profanity and sauciness, never in public. Out of a clear sky she will give you her blessing, then say she didn't say anything and start to strike a person, catching herself just in time. She is cheerful most of the time; during her menses she becomes seclusive but has clear conversation. She inclines to oppose suggestions, is very egotistic and loves to dress up. She loves movies and social activities, in which she is friendly and reserved. She wants to get married. She has gained almost 100 pounds (45 Kg.).

She does not remember her illness, being in a state hospital or the operation. She omits the last two years, always insisting that she is two years younger than her actual age. She can keep house and help her sister, doubtless indefinitely under intelligent, understanding supervision.

CASE 3.—R. K., a married woman aged 33, a housewife, admitted in August 1942 after an illness of two years seven months, had schizophrenia of the paranoid type. The husband first noticed that she had periods of silence and sadness, especially late in the day. The night before a gallbladder operation and removal of her hymen, to which she consented, she cried bitterly and claimed her husband was talking about her and making fun of her. Postoperatively she was confused and suspicious for three or four days but recovered from this attitude. About one month later her paranoid ideas were apparent, with olfactory hallucinations.

The patient was hospitalized during the early part of 1941 in two psychiatric sanatoriums. At the second she received twenty-eight electric shock treatments with temporary improvement followed by relapse. Three more shock treatments held her for the rest of the year. Early in 1942 she was given fifty-eight shocks, with improvement for only a short time. Hospitalization of three weeks brought improvement and then relapse.

On admission to the Clarkson Hospital the patient was kept in seclusion almost continuously. She exhibited paranoid tirades when questioned but was quiet and cooperative when undisturbed. A lobotomy was performed in August 1942.

During the postoperative course the paranoid response was lost, the affect blunted. She was pleasant and cooperative, repetitively leafing pages, folding paper or writing letters such as "Just a line to let you know that I'm getting along fine, that I'm getting along fine, that I'm getting along fine. . . ." Later on this repetition was broken.

At present the patient manages her home. She is pleasant and friendly and makes an effort to take her mind off worries. She has occasional periods of being jittery and seems to get depressed with physical illness. She has gained weight and can relax completely. The husband is completely satisfied with the result. Undoubtedly the operation prevented permanent institutional existence.

CASE 4.—W. B., a single man aged 22, a college student, admitted in December 1942 after an illness of five years two months, had schizophrenia of the hebephrenic type with catatonic features. His father committed suicide after financial reverses; a paternal uncle was said to be peculiar but harmless. The patient was first taken ill at college. He had always been introverted, sensitive, conscientious and studious without previous nervous disorder except a tendency toward extreme day dreaming in childhood. He had worked hard in high school and had graduated at the top of his class. The first year in college he worked hard but made a poor social adjustment. When teased by his college mates for his studiousness, he complained that they turned on the radio or made too much noise whenever he wanted to study. He made no heterosexual adjustment. In spite of this unhappiness he insisted on returning the next year; his mother thought, to prove he could get along. He was soon missed from the college and was subsequently found wandering dazedly in a nearby town. He complained of feeling inadequate, expressed much concern over world problems, and especially wanted to combat communistic influences among students. He had many ideas of reference, as that others were condemning him, was much depressed and admitted auditory hallucinations.

After hospitalization he improved slightly and, on his mother's insistence, was dismissed. Two months later he was given seven metrazol shock treatments as an ambulatory patient. He showed some improvement but returned to a private hospital on two occasions, on one of which he was given fourteen insulin shock treatments. He improved in behavior and was at home for about nine months, during which he had several violent spells of impulsiveness and lack of control and on one occasion threw his mother downstairs. He was then committed and sent to the state hospital.

On admission there he showed some evidence of deterioration with usually undeviated mood and blunted affect, although he sometimes broke into angry spells without provocation. Preoccupied with world problems and illogical thoughts, he had no systematized delusions, although the family related such ideas as that there were secret wires in the house and that he was being controlled. He was manneristic, quiet and seclusive with much lack of judgment. He laughed unmotivatedly and whispered responses to auditory hallucinations. Electric shock and insulin shock treatments were started about six months later. He made no gain. A half year later he became excited, restless, self injurious, noisy, aggressive, impulsive, violent, uncooperative and destructive, requiring constant restraint.

After admission to Clarkson Hospital he was secluded, uncooperative, negativistic, impulsive, stereotyped in speech and expression, without affective response. He was definitely blocked and often irrelevant.

A lobotomy was performed in January 1943. The postoperative course found him cooperative and partially stuporous but with pleasant response and gratitude for his care. He was incontinent. Aseptic meningitis developed as a complication; he fell into a deeper stupor but was entirely cooperative when he could be roused. After recovery from this complication he remained completely cooperative and became a friendly, carefree person. He gained 50 pounds (23 Kg.). His letters still reveal schizophrenic dissociation, but he is capable of useful work under supervision. Because he has no home he is under psychiatric care until intelligent supervision can be arranged outside an institution.

CASE 5.—R. S., a married woman aged 50, a housewife, admitted in November 1942 after an illness of four years, had schizophrenia of the catatonic type. In personality the patient was extroverted, socially active and a good mixer. When she was 45 years old she lost a baby at birth. She had never had any previous nervous or mental disorder. No family history of nervous or mental illness was obtained. The mother of the patient died when the patient was a small child.

She was taken ill while visiting away from home. She suffered short periods of amnesia and once was lost for a day in a large city. On return home she had fears of dirt accompanied by feelings of guilt and obsessive hand washing. Six months after the onset she became quiet to the point of muteness, refused to eat and was actively negativistic. She was hospitalized for three and one-half years, during which she had two full courses of insulin shock treatment, one course of metrazol shock treatment and fourteen electric shock treatments. She improved somewhat with each series of treatments but immediately relapsed to her previous catatonic state.

After admission to Clarkson Hospital in November 1942 she was given hypnotic doses of a short acting barbiturate and for short periods she was cooperative. She revealed a deep seated guilt reaction to an extramarital affair. She was given a few curare-electric shock treatments without sustained improvement.

A lobotomy was done in January 1943. This operation was incomplete on the left side because of technical difficulties. In April 1943 the left side was operated on again, with a complete incision at this time. Following the first operation the patient became cooperative, ate well and was interested in her surroundings. Incontinence was a major nursing problem. Gradually she became aggressive and sarcastic, then relapsed into inactivity and muteness. Curare-electric shock therapy produced only temporary improvement.

After the second operation an aseptic meningitis developed with recovery in about one week. Her psychologic response was more gradual, with evidence of periodic depression. Investigation showed numerous deep seated feelings of guilt over the extramarital affair; she alternated between depressive moods with feelings of guilt and aggressive, sarcastic behavior. She remains institutionalized and up to date must be considered a failure to obtain improvement from lobotomy.

COMMENT

The convalescent postoperative psychiatric nursing care of lobotomized patients is extremely important. The later social management of these changed individuals in a protected environment, education of relatives, and reeducation of the patient are real problems. Little information concerning this phase of treatment is available. Freeman and Watts [11] have recently emphasized its importance.

A phase of apathy and inertia immediately follows operation. Patients appear blank or stuporous for a few days to a week, apparently regressing to an infantile level, and have to be fed and moved about in bed. They pay no attention to excretory functions and appear totally indifferent to their surroundings. Some carry out repetitive acts indefinitely. Gradually the patient becomes more tidy and can be directed into simple activities, but these must be supervised for some weeks.

On the patient's return the family must be given detailed explanations in order to understand the patient. The nurse in charge is instructed to explain in detail the daily routine. The patient must be forced out of bed, taken to the toilet at regular intervals, removed from the toilet, and forced to bathe, dress and feed himself under daily supervision until responsibility develops. As the patient begins to eat, overeating must be controlled. In even the simplest occupational activities the patient must be specifically instructed and guided for a considerable time.

The patient's lack of self consciousness, childlike pleasure in simple things, facetiousness and sarcastic remarks must all be understood by the relatives, who must strictly overlook undesirable behavior. They need to recognize the patient's emotional immaturity for some months after surgery. He must not be permitted to assume such adult responsibilities as looking after money or making unusual social adjustments without supervision for some months. Gradually as he makes better adjustments, more tasks and responsibilities can be added. Return to former employment cannot be expected for at least three to six months after surgery. According to Freeman and Watts the degree of recovery cannot be determined until at least three years have elapsed.

SUMMARY

Prefrontal lobotomy, devised by Egas Moniz and perfected by Freeman and Watts, has been established as a useful procedure in psychiatric treatment. In our opinion its usefulness should continue to be investigated and to be limited to chronically disabled psychotic patients who have been unimproved by other therapies. It should not be used in psychoneuroses and affective states until the patients have proved totally refractory to other methods.

In certain selected chronic cases of schizophrenia, in the light of present knowledge, lobotomy should be continued in order to restore many disabled persons to social usefulness. This operation has effected a good social recovery in 4 cases of aggressive paranoid schizophrenia. One catatonic type failed to improve.

The problem of social rehabilitation of these patients opens up a new field of social and psychiatric nursing technics and needs more study to aid lobotomized patients to resume normal living.

607 Medical Arts Building.

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SALMONELLA CHOLERAE SUIS AS A CAUSE OF INDOLENT SUBCUTANEOUS ABSCESS

JOSEPH L. POSCH, M.D.
BERT E. STOFER, M.D.
AND
JOHN WINSLOW HIRSHFELD, M.D.
DETROIT

Salmonella cholerae suis, which is more commonly known as Salmonella suipestifer and is normally found associated with a virus in the hog's intestinal tract, was described by Salmon and Smith [1] in 1885. Longcope [2] in 1902 was the first to report human infections caused by this organism. Since that time there have been numerous reports in the literature describing both epidemic and sporadic cases. In 1928 White [3] collected 25 cases of "paratyphoid nature and of localized pyogenesis." Most of the cases which he found had occurred during or after the first world war. In 1937 Harvey,[4] prompted by three outbreaks of food poisoning and the sporadic appearance of the infection in 18 persons, 11 of whom were admitted to the Johns Hopkins Hospital, reviewed the literature and divided 1,425 bacteriologically proved cases into two groups: (*a*) those found in epidemic outbreaks due to a known source of infection and (*b*) sporadic cases. He found 50 of the latter recorded in medical literature and reported 21 of his own.

The most common type of sporadic infection is a bacteremia [5] which simulates typhoid. Numerous other manifestations have been reported. Among them are

Edith Hamilton, of the department of bacteriology of the City of Detroit Receiving Hospital, gave us valuable assistance.

From the Department of Surgery, Wayne University College of Medicine, and the Department of Pathology, City of Detroit Receiving Hospital.

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pneumonia,[6] pyarthrosis,[7] osteomyelitis,[8] endocarditis,[9] meningitis,[10] cholecystitis,[11] splenic abscess [11] and infection of the urinary tract.[12] Salpingitis,[13] subdural abscess,[14] infection of myoma of the uterus,[15] and acute appendicitis (a fatal case) [16] have also been described. Some of these were associated with bacteremia.

Exceedingly rare are reports of Salmonella infection involving the skin and subcutaneous tissues either following septicemia or occurring without antecedent infection of the blood stream. A subcutaneous abscess occurring in a man aged 59 was reported by Kobe [17] in 1930. Steuer [18] in 1937 obtained a pure growth of S. suipestifer from an abscess on the thigh of a 3 year old child; this abscess followed an empyema from which S. suipestifer and a pneumococcus were isolated. Todorovitch [19] described an abscess occurring in the thigh of a 32 year old patient following bacteremia. In 1941 Guthrie [20] described a fatal case of periarthritis of the right shoulder of an infant 5 months old. The joint capsule was not involved. Bornstein and his group,[21] in a study of 261 human Salmonella infections, isolated S. cholerae suis from the pus of a psoas abscess and the pus of a periproctal abscess.

Because subcutaneous lesions caused by S. suipestifer are most rare and because we wish to encourage the collection of additional data on this type of infection, we are reporting a case of indolent subcutaneous abscess due to this organism.

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REPORT OF CASE

T. M., a retired Negro laborer aged 73, first seen in the outpatient department of the City of Detroit Receiving Hospital on Oct. 12, 1942, complained of a swollen and painful left wrist. He stated that forty years previously, while he was working in a stone quarry in Gainesville, Ga., a piece of rock hit him on the back of the left wrist, severing a tendon. A foreign body was deeply embedded in the wound; the wound healed uneventfully, but a small nodule appeared in the scar. This nodule had swollen intermittently for forty years, but application of liniment had usually caused the swelling to recede.

On Sept. 20, 1942, about a month before the patient came to this hospital, a heavy cooking pot fell on his wrist, injuring the old scar. The next day the area was painful and swollen, and the swelling subsequently increased. The patient was followed in the outpatient clinic of another hospital for four days. At the end of that time, because of an elevated temperature, he was admitted there. He remained for twelve days. Following is the report from that hospital: "The left hand was markedly swollen, puffy and moderately painful. The left wrist at the radial aspect showed a prominence about 2 cm. above the surface of the arm and approximately 2 to 3 cm. in diameter. It was indolent and soft, moderately painful and fluid to palpation. The entire forearm was somewhat swollen. The patient was seriously ill and had a spiking type of temperature. The hemoglobin content was 12.5 Gm.; the red blood cell count, 3,800,000; white blood cell count, 7,100, with polymorphonuclears 80 per cent and lymphocytes 20 per cent. The blood sulfathiazole level was 4.4 mg. per hundred cubic centimeters. X-ray examination revealed a foreign body in the left wrist. Continuous hot soaks were applied to the arm, and the patient was given sulfathiazole. His temperature returned to normal the day before dismissal (Oct. 7, 1942)."

After the patient's discharge from the hospital the arm continued to be swollen, painful and tender and did not improve on supportive measures. The patient was then referred to the outpatient department of the City of Detroit Receiving Hospital, where he was first seen on Oct. 27, 1942. On October 30 the swollen area was aspirated, and 7 cc. of bloody fluid was obtained. This unfortunately was not cultured.

On November 4 the patient was admitted to the hospital for incision and drainage of the swollen area and biopsy. Examination revealed a large, apparently fluctuant mass occupying the entire dorsum of the left wrist. The mass was tender, and motion at the wrist was slightly limited. The other abnormal findings were hypertensive retinopathy, grade 2, enlargement of the heart both to the left and to the right with a diffuse apex beat, a moderately harsh systolic murmur at the apex and a soft blowing one over the aortic area, and definite arteriosclerosis of all vessels. The temperature, the pulse and the respirations were normal. The hemoglobin content was 10 Gm., and the white blood cell count was 6,000, with a differential count of 60 per cent polymorphonuclears, 37 per cent lymphocytes, 2 per cent monocytes and 1 per cent eosinophils. The Kline and Kahn tests were negative, and urinalysis showed nothing of note. X-ray examination revealed a foreign body 5 by 7 mm. in diameter on the dorsal aspect of the radius approximately 3 inches above the wrist joint. There was considerable disuse demineralization of the bones of the wrist. No evidence of involvement of the bones or of the joint by the infection could be demonstrated (fig. 1).

On November 7 under local anesthesia a longitudinal incision about 4 cm. long was made through the skin and subcutaneous tissue. Several cubic centimeters of thick greenish purulent material was encountered in the center of the mass. The mass itself consisted of gray-green rubbery tissue which appeared grossly to be tuberculous. A portion of this was removed for microscopic examination, and a pathologic report of pyogenic granuloma and organized hematoma was returned. The material obtained from the abscess was cultured and a motile gram-negative rod isolated. This grew readily on all ordinary mediums. It produced acid and gas on dextrose, maltose, mannite, sorbitol, xylose and rhamnose. There was no reaction on lactose, sucrose, dulcitol, inositol, trehalose and arabinose.

It grew readily on tartrate agar and was inhibited by citrate. It did not produce indole but did form hydrogen sulfide. On Kligler's medium there were acid and gas in the butt with an alkaline slant. Litmus milk became alkaline, and gelatin was not liquefied. Stool cultures were repeatedly negative for the organism. Routine blood agglutination tests for typhoid antigens H and O and paratyphoid B were also negative on several occasions.

The patient was discharged after three days in the hospital. The identification of the organism was completed by Dr. P. R. Edwards at the Salmonella Typing Station, University of Kentucky, Lexington, Ky., who classified it as Salmonella cholerae suis, variety Kunzendorf.

The patient was readmitted on November 22. The swelling was still present on the dorsum of the forearm. Purulent material exuded from several small sinuses, and the skin surrounding the sinuses was reddened over an area 3 by 5 cm. Beyond this for a distance of approximately 10 cm. the skin was dry, hard and scaly. On the volar aspect of the forearm were several areas of reddish discoloration 1.5 cm. in maximum diameter (fig. 2). The purulent exudate from the lesion was again cultured and the same organism isolated. At this time the white blood cell count was 5,400, with a differential count of 58 per cent polymorphonuclears, 41 per cent lymphocytes and 1 per cent eosinophils; the hemoglobin content was 11 Gm., and the red cell count was 4,280,000.

The patient's own serum agglutinated the organism strongly in dilutions up to 1:30 in a preliminary titration. Further attempts to establish the maximum titer have been precluded because of refusal of the patient to cooperate. He also refused to have the foreign body removed and left the hospital against advice. For the next few months he was seen weekly in our outpatient department. Therapy since discharge has consisted only of immobilization and routine dressings. The wound has continued to suppurate, but gradual improvement has occurred. Several home visits have revealed that the draining sinuses are still present at the site of the original lesion on the dorsal aspect

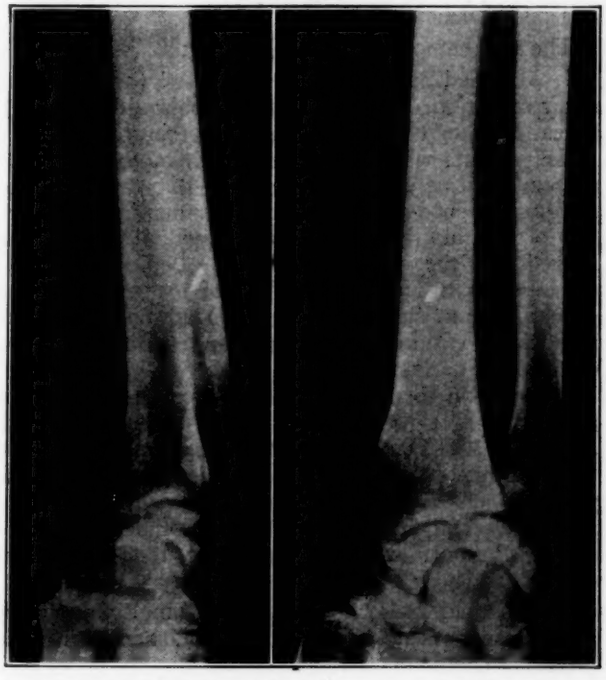

Fig. 1.—Lateral and anteroposterior views of foreign body in left wrist.

of the wrist and that 5.5 cm. above this there is another draining sinus. Motion is not impaired, and the patient wears a bandage only to prevent irritation.

This case is interesting since the patient is 73 years old and the majority of previously reported localized infections have been in children. Weaver and Sherwood,[22] in reporting a case of osteomyelitis and pyarthrosis due to a hematogenous infection in a 9 month old baby girl, reviewed the literature and concluded that localized S. suipestifer infection apparently occurs only in infants.

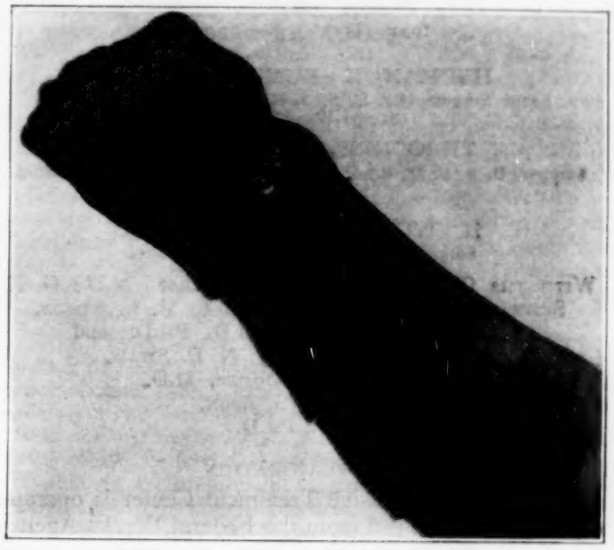

Fig. 2.—Subcutaneous abscess of left wrist.

As is common in cases of sporadic infection due to this organism, there is no known source of contact in the case just reported. The patient stated that he had not eaten any spoiled or infected meat. Though he had at one time cared for and slaughtered pigs, he had not had contact with them for over twenty years. Gajzago and Göttche [8] in 1942 discussed the possible sources of such infection in children, and though they found that in several cases it followed exposure to dead and infected pigs, they came to the conclusion that the main source of infection is probably healthy persons who are carriers.

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Complications and After-Effects of Diphtheria.—In practically all cases of diphtheria complications occur; the most important of these are secondary infections in the upper respiratory tract. Streptococci are perhaps the most frequent secondary invaders; they are the usual cause of the interstitial and lobular types of pneumonia found so commonly at autopsy as well as of the acute nephritis that sometimes develops. Among the other serious complications may be mentioned obstruction of the air passages and asphyxiation; this results from aspiration of the diphtheritic membrane and also aspiration pneumonia, the development of which is favored by paralysis of the laryngeal muscles. When destruction of the mucosa and submucosa is extensive, as it so often is when the lesions are secondarily infected, healing may be accompanied by scarring followed by contraction of the scar and narrowing of the air passages; laryngeal stenosis produced in this way is one of the common complications of the disease. Infections in the middle ear and mastoid processes are frequent and are due either to the secondary invaders or to the diphtheria bacilli; these organisms pass upward and reach the middle ear by way of the eustachian tube. Otitis media and mastoiditis originating in this way may lead to any or all of the serious temporary and permanent disorders that usually follow infections in the temporal bone.—Forbus, Wiley D.: Reaction to Injury, Baltimore, Williams and Wilkins Company, 1943.

THE INTENSIVE TREATMENT OF GONORRHEA AND SYPHILIS

ORGANIZATION, OBJECTIVES, ACTIVITIES AND ACCOMPLISHMENTS OF THE CHICAGO INTENSIVE TREATMENT CENTER

PRELIMINARY REPORT

HERMAN N. BUNDESEN, M.D.
Senior Surgeon (R), U. S. P. H. S. (Inactive); President, Chicago Board of Health

THEODORE J. BAUER, M.D.
Surgeon, U. S. P. H. S.; Venereal Disease Control Officer, Chicago

AND

H. WORLEY KENDELL, M.D.
Surgeon (R), U. S. P. H. S.; Director

WITH THE COLLABORATION OF R. M. CRAIG, M.D.; G. X. SCHWEMLEIN, M.D.; E. C. SITTLER; M. F. STEVES, M.D.; E. A. STRAKOSCH, M.D., PH.D.; and A. A. RODRIQUEZ, M.D.; N. D. SHAW, M.D.; JACK RODRIQUEZ, M.D., and H. C. S. ARON, M.D., PH.D.

I. ORGANIZATION

The Chicago Intensive Treatment Center is operated under grants received from the Federal Works Agency, the U. S. Public Health Service, the state of Illinois and the Chicago City Council.

It was dedicated on Nov. 29, 1942 as an added facility in the Venereal Disease Control Program of the Chicago Health Department. The center receives its patients mainly from the health department clinics, selective service, and also from private physicians and the various hospitals. Attendance at the center is voluntary.

Extensive new case finding programs have been established in the health department. These have effectively uncovered for the Chicago Intensive Treatment Center many sources of patients infected with venereal disease which were heretofore missed. Among the most important methods used in locating the sources of infection are (1) a thorough search for and complete examination of all known contacts of infected military personnel, (2) routine examinations of such groups as selective service registrants and court cases and (3) complete cooperation of the majority of tavern, hotel and industrial groups in searching out, for the health department, suspects of venereal disease.

II. OBJECTIVES

As a wartime emergency activity, the primary objective of the Chicago Intensive Treatment Center is to control effectively, and as quickly and safely as possible, the spread of venereal diseases by making noninfective those who spread these diseases. Therefore, persons with the following types of disease are admitted for diagnosis and treatment:

A. *Syphilis:*

1. Primary and secondary syphilis.
2. Relapsing primary and secondary syphilis.
3. Untreated early latent syphilis meeting the following requirements:

Age of patients to be 25 years or less, with the exception of those patients between the ages of 25 and 30 who give a two year or less specific history of untreated syphilis.

B. *Gonorrhea:*

1. Named promiscuous sources or contacts of persons infected with gonorrhea who have positive evidence of the disease either by laboratory or by clinical findings.
2. Promiscuous persons for whom the epidemiologic information justifies isolation.
3. Infectious gonorrhea resistant to routine methods of treatment.
4. Those cases discovered by draft boards or selective service field stations during routine medical examinations.
5. Patients with severe complications of the genital adnexa, ophthalmia and arthritis, due to gonorrhea.

Undiagnosed Lesions:

All patients presenting themselves to the Chicago Health Department clinics with acute undiagnosed genital lesions.

III. ADVISORY COMMITTEE

Dr. Morris Fishbein suggested the appointment of a scientific advisory committee. This panel includes authoritative leaders in the field of venereal diseases who make decisions concerning policies and procedures to be followed and types of treatment to be employed, as well as dosages of the drugs to be used. The advisory group now includes the following physicians: Herman N. Bundesen, Paul A. O'Leary, Francis Senear, John S. Coulter, Frank Krusen and Norris J. Heckel, and the following, who have been especially concerned with development of apparatus for fever treatment: Charles F. Kettering, D.Sc., and Paul de Kruif, Ph.D.

IV. ACTIVITIES AND ACCOMPLISHMENTS

A. *Syphilis.*—Three methods of intensive treatment for early syphilis are being employed—two comparative and one noncomparative method.

The two comparative methods are:

1. Modified Simpson, Kendell, Rose [1] (artificial fever in air conditioned cabinet plus arsenobismuth therapy),[2] hereafter referred to as fever-chemotherapy.

All patients who complete fever-chemotherapy are at present routinely given 1.76 mg. of mapharsen per kilogram of body weight (180 mg. maximum regardless of weight) in three equally divided doses administered by the multiple syringe method. This is combined with one single dose of elemental bismuth (2 cc. bismuth subsalicylate in oil) administered intramuscularly within twenty-four hours prior to the day of fever-chemotherapy.

In addition to mapharsen and bismuth, each patient also receives eight hours of fever maintained at the level [3] of 106 F. (rectal) in the hypertherm cabinet.

The first dose of mapharsen is given when the patient's temperature first reaches the desired level of 106 F. (rectal), the second dose at the beginning of the third hour, and the third dose at the beginning of the fifth hour of maintained fever.

2. Modified Schoch-Alexander [4] (multiple syringe, short term arsenobismuth therapy), hereafter called intensive chemotherapy.

All patients who complete intensive chemotherapy are at present routinely given 80 mg. of mapharsen twice

Dr. Aron is consultant in biochemistry and nutrition.

Drs. Craig, Schwemlein and Jack Rodriquez are assistant surgeons (R) in the United States Public Health Service.

Collaborators: Max Biesenthal, M.D., consultant in pulmonary diseases; Anne L. Bohning, M.D., consultant in cardiovascular diseases.

From the Section on Fever-Chemotherapy of Syphilis and Gonorrhea (Drs. Craig, Schwemlein and Steves and E. C. Sittler), the Section on Venereal Disease Diagnosis and Chemotherapy of Syphilis (Drs. Strakosch and A. A. Rodriquez) and the Section on Gonorrhea (Drs. Shaw and Jack Rodriquez).

1. Simpson, Walter M.; Kendell, H. Worley, and Rose, Donald L.: The Treatment of Syphilis with Artificial Fever Combined with Chemotherapy, Supplement 16 to Venereal Disease Information.

2. As developed at the Kettering Institute for Medical Research, Miami Valley Hospital, Dayton, Ohio.

3. Allows for 0.2 degree F. ± variation from the desired level.

4. Schoch, Arthur G., and Alexander, Lee J.: Short Term Intensive Arsenotherapy of Early Syphilis, Am. J. Syph., Gonor. & Ven. Dis. **25**: 607 (Sept.) 1941 and Arch. Dermat. & Syph. **46**: 128 (July) 1942.

daily for seven days (regardless of weight) by the multiple syringe method. This is combined with 150 mg. of elemental bismuth (2 cc. of bismuth subsalicylate in oil) administered intramuscularly in one dose every second day for four doses.

The noncomparative method [5] is the modified Eagle-Hogan (multiple syringe, long term arsenobismuth therapy), hereafter called long term intensive chemotherapy.

All patients who complete long term intensive chemotherapy are at present routinely given 1 mg. of mapharsen per kilogram of body weight, administered by the multiple syringe method three times weekly for eight weeks. This is combined with 75 mg. of elemental bismuth (1 cc. of bismuth subsalicylate in oil) administered intramuscularly in one dose twice weekly for sixteen doses.

Method of Assignment for Treatment: When the diagnosis of syphilis is established and the patient agrees to undergo treatment, he is assigned either to the fever-chemotherapy section or the intensive chemotherapy section by the admitting clerk. The distribution of patients is on a two to one ratio, two to the fever-chemotherapy section and one to the intensive chemotherapy section. Because of the greater length of time needed to complete treatment, patients in the intensive chemotherapy section remain in the center twice as long (approximately fourteen days) as those in the fever-chemotherapy section. This is why twice as many patients are assigned to the fever-chemotherapy section. This distribution by the admitting clerk prevents selectivity of patients for the respective forms of intensive treatment. Those patients who, on examination, are found to have contraindications for either of the two comparative methods are then referred for long term intensive chemotherapy.

Regardless of the section to which the patient is admitted, an extensive physical examination by competent physicians, including laboratory survey, is completed before treatment for syphilis is started. This examination includes a complete pulmonary and cardiovascular examination by special consultants who have been selected because of their training. In our experience, intensive treatment is contraindicated in early active tuberculosis and certain forms of cardiovascular disease. The examination also includes x-ray examination of the chest, electrocardiogram, lumbar puncture,[6] blood count, sedimentation time, complete urinalysis, and icterus index. No patient is given intensive treatment until the diagnosis has been conclusively established and the medical consultants have indicated that, in their opinion, there are no contraindications for treatment.

The following observations in connection with the three methods of intensive treatment are offered only as a preliminary report, as the time period over which these studies have been made is insufficient to permit any conclusions as to the ultimate results of the intensive forms of therapy.

Fever-Chemotherapy: From Nov. 10, 1942 through Oct. 8, 1943, 931 patients were given fever-chemotherapy for syphilis. Of the 931 treated, 2 cases terminated fatally—the 13th and 69th patients treated. Since the second death (69th patient), 862 have been treated consecutively with no fatality or serious reactions.

The following are the case records in these two fatalities:

CASE 13.—A woman aged 23, weighing 113 pounds (51 Kg.), with a diagnosis of secondary syphilis (generalized maculopapular eruption), received eight hours of maintained fever at 106 F. (rectal) combined with 150 mg. of elemental bismuth (2 cc. of bismuth subsalicylate in oil), administered intramuscularly within twenty-four hours prior to the day of fever-chemotherapy, and mapharsen 120 mg. in divided doses of 40 mg. each, administered at the beginning of the first, third and fifth hours of maintained fever. Death occurred on the eleventh post-treatment day. Partial postmortem examination (the head was not examined) revealed miliary tuberculosis of the right lung, liver and spleen; caseous tuberculosis of the lymph nodes (peritracheal); acute yellow atrophy of the liver; pronounced parenchymatous degeneration of the heart, liver and kidneys, and hemorrhagic cystitis.

CASE 69.—A woman aged 22, weighing 122 pounds (55 Kg.), with a diagnosis of primary syphilis and gonorrheal urethritis and cervicitis, with urethral cultures and smears positive for gonococci and darkfield positive for Treponema pallidum from labial lesions, received eight hours of maintained fever at the level of 106 F. (rectal), combined with 150 mg. of elemental bismuth (2 cc. of bismuth subsalicylate in oil) administered intramuscularly within twenty-four hours prior to the day of fever-chemotherapy, and mapharsen 60 mg. in divided doses of 30 mg. each, administered at the beginning of the first and third hours. Death occurred on the sixth post-treatment day. No postmortem examination was made. The exact cause of death was undetermined, but it was the clinical impression that the cause of death was tuberculous meningitis.

Following the first death the maximum dose of mapharsen was reduced from 120 to 60 mg. for all patients. This reduction in mapharsen dosage was made to determine, if possible, the minimum amount of mapharsen, when combined with fever and bismuth, required to obtain maximum results safely.

Following the second death it was decided to permit only those patients to receive fever-chemotherapy and intensive chemotherapy who were examined by an authority in pulmonary diseases and found to be free from active tuberculosis.

In addition to the change in the mapharsen dosage and in the diagnostic procedures referred to, the following improvements were made:

1. Adjustment of the patient's water and electrolyte balance by controlling the fluid intake. This prevented dehydration or overhydration and depletion of the electrolyte reserve and resulted in a more satisfactory treatment and postfever recovery.

2. Reduction in fever cabinet temperature below that of the patient's temperature. This was accomplished through the introduction of a modulating control which operates on the heating and humidifying devices of the cabinet.

3. Routine calibration of the rectal indicating thermometer by means of a constant temperature bath. This insured the accuracy of the temperature readings.

These changes materially increased the patient's comfort and reduced the incidence of complications.

After 241 patients had received 60 mg. of mapharsen, it was necessary to retreat 51 of them for the following reasons: Chancre recurred in 1 (monorecidive); there were mucocutaneous relapses in 38; 2 developed secondary lesions even though treated while in the chancre phase; in 2 cases the serologic tests became negative and reverted to positive (serologic relapse); 6 patients were retreated because the serologic tests remained

5. Those patients rejected from fever-chemotherapy and intensive chemotherapy were candidates for this method.

6. It is recognized that there is some objection to the performance of lumbar punctures before the institution of antisyphilitic treatment of patients with primary and secondary syphilis. In the intensive treatment employed, this has been a routine investigative procedure with all but pregnant patients. In 1,380 spinal fluid specimens examined before treatment of the patient, 226 specimens (16.4 per cent) showed positive laboratory findings.

positive for at least six months (serologic persistence or progression), and 2 patients because they were thought to have reinfections.

The maximum dose was then gradually raised until at the present time patients receive 1.76 mg. of mapharsen per kilogram of body weight, maximum 180 mg. With this amount of mapharsen given to 488 patients to date, it was necessary to retreat 11 patients for the following reasons: Two progressed from chancre to secondary lesions; 3 had mucocutaneous relapses; in 1 case the secondary lesions involuted but recurred shortly; the serologic tests which had reverted to negative again became positive in 1 case (serologic relapse); the serologic tests remained positive for at least six months in 1 case (serologic progression), and there were 3 patients who had possible reinfections.

It has been the policy to give those patients who, following one session of fever-chemotherapy, failed to obtain satisfactory clinical and serologic results a course of intensive chemotherapy. Those patients classified as possible reinfections when again admitted for treatment are redistributed as new patients.

Eight hundred and sixty-six of the 931 patients completed fever-chemotherapy. Ninety-two of the 866 patients treated are not included in table 1 for the following reasons: Eighty were too recently treated or failed to report for examination; 5 had possible reinfections; 4 had asymptomatic neurosyphilis; 2 died, and 1 patient was proved nonsyphilitic. The status of the remaining 774 patients, grouped by diagnosis, is presented in table 1.

TABLE 1.—*Syphilis Patients Given Fever-Chemotherapy, Classified by Diagnosis and Last Reported Status, Nov. 10, 1942 Through Oct. 8, 1943*

Last Reported Serologic or Clinical Status After Treatment	Diagnosis on Admission					
		Primary		Secondary		
	Total	Seronegative	Seropositive	Previously Untreated	Relapsing	Latent
Serologic titer status negative	222	32	68	105	8	9
Under observation declining	242	..	31	131	19	61
Rising:						
Significant	37	1	3	18	1	14
Insignificant	35	1	6	17	1	10
Lag effect	15	..	6	5	..	4
Stabilized	150	1	14	85	7	43
Failures:						
Serologic:						
Relapse	3	..	..	3	..	..
Progression	9	..	1	6	1	1
Clinical:						
Relapse	45	..	4	37	4	..
Progression	16	..	5	8	3	..
Total	774	35	138	415[a]	44	142

[a] Including 9 patients with 1 to 4 previous arsenical injections, and 1 patient with 12 arsenical and 2 bismuth injections.

The serologic titer status is analyzed according to the results of serial after treatment quantitative Kahn tests.

Negative: Darkfield positive seronegative primary syphilis remaining seronegative after treatment; seropositive syphilis reversed to seronegative after treatment.

Declining titer: Seropositive syphilis with progressive decrease in Kahn quantitative units after treatment.

Rising titer: Syphilis with progressive increase in Kahn quantitative units after treatment, divided into three groups. Significant: Any rising titer above 4 units. Insignificant: Any rising titer 4 units and below. Treatment lag effect: Rising titer immediately after treatment.

Stabilized titer: Syphilis with no change in the Kahn quantitative units on the last two or more successive tests after treatment.

Serologic relapse: Serums which were initially positive reversed to negative and subsequently became positive.

Serologic progression: Positive serums which have not become seronegative and have been retreated after a six months observation period.

TABLE 2.—*Reasons for Removal of 65 Patients from Cabinet*

Lack of cooperation	27
Persistent mental confusion	21
Cardiovascular fatigue	6
Persistent nausea and vomiting associated with abdominal cramps	3
Extreme generalized body fatigue	4
Mechanical cabinet difficulties	2
Convulsion	2

Sixty-five of the 931 patients did not receive a complete fever-chemotherapy treatment and were removed from the cabinet for the reasons given in table 2. Twenty-one of the 65 received between seven and eight hours of maintained fever combined with the prescribed dose of mapharsen; the remaining 44 received less than seven hours of maintained fever and varying amounts of mapharsen. All patients were either immediately treated with intensive chemotherapy or placed under observation, dependent on their clinical status of infectiousness.

Patients are dismissed the morning of the third day after fever-chemotherapy if there are no active lesions of the skin or mucous membranes and if other venereal diseases, when present, have been satisfactorily treated. Patients are instructed to return one week after dismissal from the center for clinical and serologic reexamination; thereafter, at weekly intervals until all lesions have completely healed. When such criteria have been satisfied, the patients are requested to return every two weeks until two consecutive negative serologic tests have been obtained, and thereafter at monthly intervals. Patients are instructed to report immediately, however, if clinical signs or symptoms are noted. An intensive follow-up secures the return of the large majority of those patients who do not obey these instructions.

Intensive Chemotherapy: From Feb. 19, 1943, through Oct. 8, 1943, 390 patients have been given intensive chemotherapy[7] as the second comparative method of treatment for syphilis. This series was instituted to determine whether this method, or one of its modifications, may furnish an intensive arsenobismuth therapy to be given safely without the necessity for the elaborate equipment and highly trained personnel needed in fever-chemotherapy. Of the 390 cases treated, none terminated fatally.

From Feb. 19, 1943 to June 30, 1943 a total of 172 patients were treated with 60 mg. of mapharsen twice daily, in the morning and in the afternoon, by the syringe method, over a period of ten days.

Of the 172 patients treated, nitritoid crises were encountered in 3 patients. Milian's syndrome,[8] or ninth day erythema, was seen in 22 of the patients treated. All of the Milian's syndrome reactions were severe enough to necessitate the discontinuance of treatment. This syndrome did not occur before the seventh day. To reduce to a minimum the necessity of giving mapharsen during the presence of this syndrome, the following modification was adopted on June 21, 1943:

Seventy-five mg. of mapharsen twice daily, morning and afternoon, for seven days, combined with 75 mg. of elemental bismuth (1 cc. of bismuth subsalicylate in oil) every second day for four doses, after which the patient was discharged to the outpatient department, where 150 mg. of elemental bismuth (2 cc. of bismuth subsalicylate in oil) was given every fifth day for six doses.

7. It was decided not to use the "five day continuous intravenous drip method" as it is being evaluated at numerous centers all over the country.

8. Elevation of temperature, swelling of eyelids, conjunctivitis, lymphoid hyperplasia, malaise, sore throat, polymorphic erythematous skin eruption.

From July 1, 1943 to Sept. 25, 1943 a total of 208 patients were treated by this modified method. Of the 208 patients treated, nitritoid crises were encountered in 2. Milian's syndrome, or ninth day erythema, was seen in 18 of the patients treated. Two patients developed encephalitis, 1 in the evening of the seventh day of treatment, remaining unconscious for twenty-four hours and recovering without sequelae, the other in the evening of the sixth treatment day, remaining unconscious for twenty days and, at the present writing, recovering.

Ulcerative bismuth stomatitis was observed in 24 patients. This complication was evident to such a degree that discontinuance of treatment was necessary.

Two hundred and sixty-three of the 390 patients completed intensive chemotherapy. Sixty-three of the 263 patients treated are not included in table 3 for the following reasons: 53 were too recently treated or failed to report for reexamination, 6 had asymptomatic neurosyphilis, and 4 were treated for serologic relapse.

The status of the remaining 200 patients, grouped by diagnosis, is presented in table 3.

From March 1, 1943 through Oct. 8, 1943 all patients received 1 mg. of mapharsen per kilogram of body weight, administered by the multiple syringe method three times weekly for eight weeks, combined with 75 mg. of elemental bismuth (1 cc. of bismuth subsalicylate in oil), administered intramuscularly in one dose twice weekly for sixteen weeks.

Milian's syndrome was encountered in 2 cases. In these the treatment was temporarily discontinued for from five to eleven days, after which time it was resumed without any further complications. One female patient developed agranulocytosis and pneumonia after the eighth injection of mapharsen, and another female patient developed generalized eczematoid dermatitis two days after her twenty-fourth arsenic injection. Both recovered without sequelae. Bismuth stomatitis was noted in 3 patients.

Ninety-eight of the 181 patients completed the long term intensive therapy. Seventeen of the 98 patients treated are not included in table 5 for the following reasons: 12 failed to report for examination, 1 had asymptomatic neurosyphilis, 1 had tertiary syphilis

TABLE 3.—*Syphilis Patients Given Intensive Chemotherapy,* Classified by Diagnosis and Last Reported Status, Feb. 19, 1943 Through Oct. 8, 1943*

Last Reported Serologic † or Clinical Status After Treatment	Diagnosis on Admission												
				Primary				Secondary					
	Total			Seronegative		Seropositive		Untreated		Relapsing		Latent	
	Number	10 Day	7 Day	10 Day	7 Day	10 Day	7[a] Day	10[b] Day	7[c] Day	10 Day	7 Day	10 Day	7 Day
Serologic titer status negative..	63	45	18	3	2	10	7	22	7	9	1	1	1
Under observation declining.....	60	32	28	..	..	4	1	16	15	8	6	4	6
Rising:													
Significant.....	15	11	4	..	..	1	..	4	1	3	..	3	3
Insignificant.....	11	9	2	..	..	3	..	3	..	1	1	2	1
Stabilized.....	41	27	14	..	..	2	..	11	8	3	2	11	4
Failures (clinical):													
Relapse.....	8	8	..	..	..	..	..	2	..	6	..	..	..
Progression.....	2	2	..	..	..	2	..	..	..	..	..	..	..
Total.....	200	134	66	3	2	22	8	58	31	30	10	21	15

* Classified into two groups: 10 day, patients who received 1,200 mg. of mapharsen in 10 days, and 7 day, patients who received 1,050 mg. of mapharsen plus 300 mg. of elemental bismuth in 7 days, and in addition 900 mg. of elemental bismuth within one month in outpatient department.
† See classification for table 1: (a) including 1 reinfection; (b) including 3 patients with previous treatment and 1 reinfection; (c) including 2 patients with previous treatment and 1 reinfection.

Of the 173 patients who received 1,200 mg. of mapharsen within ten days, it was necessary to retreat 10 for the following reasons: 8 patients developed mucocutaneous relapses and 2 developed secondary lesions even though treated while in the chancre phase. It has been the policy to give those patients classified as failures following one course of intensive chemotherapy one session of fever-chemotherapy.

Intensive chemotherapy patients are dismissed from the center after receiving the total dose of mapharsen if there are no active lesions of skin or mucous membranes and if other venereal diseases, when present, have been satisfactorily treated. Follow-up procedures on dismissal, when all treatment has been completed, are the same as were described under fever-chemotherapy.

Long Term Intensive Chemotherapy: This method has been employed as the noncomparative method of intensive treatment.

From Oct. 31, 1942 through Oct. 8, 1943, 181 patients were given long term intensive chemotherapy for syphilis. Of the 181 cases treated, none terminated fatally. From Oct. 31, 1942 to March 1, 1943 a total of 68 patients were treated with mapharsen three times weekly for ten weeks, according to table 4.

(biopsy reported as gumma of skin), 2 were treated for serologic relapse, and 1 had congenital syphilis.

Patients are dismissed to the outpatient department when there are no active skin or mucous membrane lesions and if other venereal diseases, when present, have been satisfactorily treated. On the average, patients receive two weeks of treatment in the center

TABLE 4.—*Table of Treatment*

Weight (Kilograms)	Dose (Milligrams)
Less than 40.....	40
40-50.....	50
50-60.....	60
60-80.....	70
Over 80.....	80

and six weeks in the outpatient department. Follow-up examinations on dismissal, when all treatment has been completed, are the same as described under fever-chemotherapy.

B. *Gonorrhea.*—Two approved methods of treatment for gonorrhea are in operation at the center.

1. Sulfonamide: Female patients routinely receive 1 Gm. of sulfathiazole every four hours, four doses daily, over a five day period, for a total of 20 Gm.

Male patients receive 1 Gm. of sulfathiazole every four hours, night and day, over a period of three days for a total of 18 Gm.

2. Artificial Fever Combined with Sulfonamides: Those patients classified as "sulfonamide resistant" are given artificial fever combined with sulfonamides. Male and female gonorrhea patients are classified as "sulfonamide resistant" if there are present positive cultures for gonococci after two routine courses of sulfonamide therapy. Patients are accepted for treatment following an extensive physical examination, including complete laboratory survey. The physical status must meet the same requirements as those employed in fever-chemotherapy for syphilis. This treatment consists of eight hours' maintained fever at 106 F. (rectal) combined with 7 Gm. of the sulfonamide given over an eighteen hour period prior to the beginning of the fever treatment.

A total of 1,786 patients were admitted to the center for the treatment of gonorrhea from Nov. 10, 1942 through Oct. 8, 1943. Of these 1,786 patients, 1,249 were females and 537 males. Of the 1,786 patients, 106 were given artificial fever therapy combined with the sulfonamides.

TABLE 5.—*Syphilis Patients Given Long Term Intensive Chemotherapy, Classified by Diagnosis and Last Reported Status, Oct. 31, 1942 Through Oct. 8, 1943*

Last Reported Serologic * or Clinical Status After Treatment	Diagnosis on Admission					
		Primary		Secondary		
	Total	Sero-negative	Sero-positive	Untreated	Relapsing	Latent
Serologic titer status negative	52	4	12	31[a]	2	3
Under observation declining	9	..	1	6	..	2
Rising:						
Significant	3	..	..	3	..	..
Insignificant	4	..	1	2	1	..
Stabilized	12	..	2	5[b]	..	5
Failure:						
Serologic relapse	1	..	..	1	..	..
Total	81	4	16	48	3	10

* See classification for table 1; (a) including 1 patient with previous treatment; (b) including 1 possible reinfection.

Female gonorrhea patients are discharged from the center after treatment subsequent to four consecutive daily negative cultures for gonococci. Male gonorrhea patients are discharged after one negative culture if all suggestive clinical findings have disappeared.

Male and female patients discharged from the center are followed in the outpatient clinic for a period of three months.

A detailed report of the results and the technic employed will be published at a later date when statistics are available.

SUMMARY

1. The extensive case finding and case holding program causes a large number of patients with infectious venereal diseases to hospitalize themselves voluntarily. With few exceptions, each of these patients completes the prescribed course of treatment in the center.

2. Large numbers of spreaders of venereal disease have been removed from circulation and admitted to the center by mass case finding and case holding procedures. The rapid suppression of infectious lesions by intensive treatment interrupts the chain of contact. The effect that this will produce on the incidence of early syphilis in the Chicago area will be determined.

3. Patients remain in the center until active lesions of the skin and mucous membrane have been healed. The average stay is seven days in the fever-chemotherapy section and fourteen days in the intensive chemotherapy section.

4. An advisory board was appointed to determine the routines of treatment and dosages used in intensive treatments.

5. For elimination of needless complications or fatalities, specialists made physical examinations and laboratory study of each candidate for intensive treatment.

6. Following the first death, and in the interest of safety, the dose of mapharsen was reduced in fever-chemotherapy from 120 to 60 mg. in a series of 241 consecutive cases. This reduction in mapharsen was used to determine, if possible, the minimum amount of the drug needed to render patients noninfectious. The number of failures in this series has been 21 per cent (8 serologic and 41 clinical relapses).

7. In the present series of 488 patients the dose of mapharsen has been raised to 1.76 mg. per kilogram of body weight in fever-chemotherapy. The number of failures in this series has been 1.6 per cent (2 serologic and 6 clinical relapses). The time interval of observation in this last series is less than for the previous group. However, at present there are no indications of an increase in the number of relapses.

8. Three hundred and ninety patients were treated with intensive chemotherapy, 172 receiving 1,200 mg. of mapharsen within ten days. This group was observed for seven months; 5.8 per cent failures were noted (10 mucocutaneous relapses). The method was discontinued since reactions severe enough to stop treatment were encountered in 11.9 per cent of the cases treated. A modification was then adopted whereby all the mapharsen was given within seven days, in addition to which bismuth was added. Two hundred and eight patients were treated with this regimen. The observation period of this group is too short to allow any conclusion.

9. The long term intensive chemotherapy was not used as a comparative procedure; only those patients rejected for fever-chemotherapy and intensive chemotherapy were treated. Therefore, no conclusions concerning its efficiency are made. However, of the 81 patients treated with this system, 52 have thus far become serologically negative and 1 patient developed serologic relapse. There have been no clinical relapses to date.

10. A total of 1,786 patients were admitted to the center for treatment of gonorrhea from Nov. 10, 1942, through Oct. 8, 1943. A detailed report of the results and the technic employed will be published when statistics are available.

11. It is repeated with emphasis that this is a preliminary report of patients treated prior to Oct. 8, 1943 and under observation for periods varying from one to twelve months. The report is offered primarily to indicate the safeguards necessary in establishing the value of the intensive method of treatment of the venereal diseases here described. Continued observation of this group for a long period is necessary before deductions can be attempted as to the actual value of the systems of treatment being employed.

CUTANEOUS REACTIONS DUE TO THE BODY LOUSE (PEDICULUS HUMANUS)

SAMUEL M. PECK, M.D.
Senior Surgeon (R), U. S. Public Health Service
WILLARD H. WRIGHT, D.V.M., PH.D.
Professor of Zoology; Chief, Division of Zoology
AND
JAMES QUINCY GANT JR., M.D.
P. A. Surgeon (R)
BETHESDA, MD.

While infestation with the body louse (Pediculus humanus) is not infrequent in our civilian population, it does not constitute a serious public health problem. Under wartime conditions, however, when large numbers of our combat forces may become infested with this parasite, there is the possibility of their developing the various diseases for which the lice are vectors. In addition many observers believe that the discomfort from the accompanying pruritus may reduce the efficiency of the infested men.

The timely importance of the problem seemed to warrant additional work on the dermatologic phases of louse infestations. The maintenance of a large colony of lice for use in insecticidal investigations in the Division of Zoology afforded an opportunity for observing cutaneous lesions and for conducting intradermal and other tests on persons who had fed lice over relatively long periods of time.

REVIEW OF THE LITERATURE

According to most authors, the earliest manifestations of the louse bites are minute red, noninflammatory points which are flat with the skin. The lesions quickly become papular and wheal-like. Pruritus is a prominent symptom and secondary eczematization may occur as the result of scratching. In cases of long standing the skin may become thickened, dry and scaly, and eventually a pigmentation may develop.

The effect of the bite and the itching varies in different individuals just as in the bites from other insects. Furthermore, the manifestations are no doubt correlated in part with the degree of infestation.

Sikora,[1] after allowing herself to be bitten about four thousand times, came to the conclusion that there was practically no itching from the bite. However, she reported that, when biting, 1 out of every 10 lice produced a sticking sensation like that of a fine needle.

Swellengrebel [2] allowed lice to bite his arm and observed a slight hyperemia lasting an hour at the site of the bite, there being no itching. If, however, he crushed the louse while it was feeding, the spot became reddened, edmatous and itchy. Even a slight necrosis of tissue took place. He therefore concluded that it was the crushing of the louse that produced most of the cutaneous manifestations. However, Belding [3] attributed the irritating effects of the bite to the saliva.

Nuttall [4] as well as Jamieson [5] and others [6] believed that a febrile condition may develop owing to the skin irritation or the bite itself. These authors observed the appearance of fever and malaise as well as a generalized eruption after feeding several thousand lice. Nuttall [4] considered an anaphylaxis as a possibility to account for the temperature. He concluded from his experiments that there was present in the salivary glands of the louse a substance which was sufficiently toxic to give rise to a generalized skin eruption and a mild fever.

Not one of the aforementioned authors has apparently considered the possibility of the louse feces playing a role in the pathogenesis of the skin irritation. In fact, Moore and his collaborators [6] concluded from their experiments that the feces were not involved in the inflammatory reactions. However, in the course of our observations of the cutaneous changes following exposure to lice it seemed that the reaction was more intensified when a considerable quantity of feces was present on the skin. This led us to the view not only that the reaction might be due to the injection of an irritant from the saliva but that the feces themselves might play an important role in the inflammatory process. We are, of course, cognizant of the fact that the feeding of large numbers of lice on a small area of the skin provides a concentration of louse feces probably not encountered in natural infestations. However, the fact remains that in such infestations feces are deposited directly on the skin of the host and furthermore are being continually sifted from the clothing on to the surface of the body.

MATERIALS AND METHODS

Strain of Lice Used.—The original colony, consisting of 2 females, several larvae and numerous ova, was obtained on Nov. 30, 1942 from Major Cornelius B. Philip of the Army Medical School. This colony was fed continuously by one of us (W. H. W.) between that date and December 15, the lice being kept on the body at all times during the day and night. On the latter date continuous feeding was discontinued because of the severe reactions, and the lice were fed only for periods varying between four and eight hours daily. Between feedings they were kept in an incubator at a temperature of 86 to 87 F. and a relative humidity of 70 per cent. Continuous feeding of the lice for the period of two weeks resulted in such expansion of the colony that it was divided on several occasions and parts given to other persons to feed.

Method of Breeding.—For rearing and feeding purposes the lice were maintained in accordance with the method of Wolbach, Todd and Palfrey.[7] A portion of the top and bottom was stamped out of ointment tins measuring 2 inches in diameter and 5/8 inch in depth, providing an opening 1 inch in diameter. Over these openings was cemented silk bolting cloth having approximately 84 meshes to the square inch. A metal bridge soldered to the top of the ointment tin provided a holdfast apparatus for the leather strap which bound the box to the surface of the skin of the arm or leg.

After the establishment of the colony as described, the lice were fed for periods varying between four and eight hours a day, depending on the numbers needed for insecticidal tests, the longer the period of feeding the more rapid being the multiplication in the colony. When not actually on the body, the lice were maintained in the incubator under the conditions described except from Saturday evening until Monday morning, when they

From the Dermatoses Investigations Section, Division of Industrial Hygiene, National Institute of Health.

1. Sikora, H., cited by Nuttall.[4]
2. Swellengrebel, N. H., and Otten, L.: Experimentelle Beiträge zur Kenntnis der Uebertragung der Pest lurch Flohe and Lause, Centralbl. f. Bakt. **74:** 592-603, 1914.
3. Belding, David L.: Textbook of Clinical Parasitology, New York, D. Appleton-Century Company, 1942.
4. Nuttall, George H. F.: The Part Played by Pediculus Humanus in the Causation of Disease, Parasitology **10:** 43-79 (Nov.) 1917; Biology of Pediculus Humanus, ibid., pp. 80-185.
5. Jamieson, W. A.: On Some Rarer Effects of Pediculi, Brit. J. Dermat. **1:** 321-327, 1888.
6. Moore, William, and Hirschfelder, A. D.: An Investigation of the Louse Problem, Research Publications of the University of Minnesota **8,** July, 1919.
7. Wolbach, S. B.; Todd, J. L., and Palfrey, F. W.: The Etiology and Pathology of Typhus, League of Red Cross Societies at the Harvard University Press, Cambridge, Mass., 1922.

were taken home by various members of the staff of the Division of Zoology. During this time, when the lice were not actually feeding, the cages were kept in a pocket of the clothing of the individual.

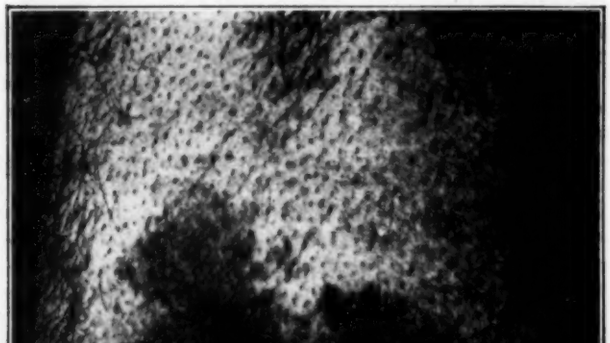

Fig. 1.—Inflammatory reaction on the calf of the leg of a hypersensitive person (volunteer 1 in the table) forty-eight hours after exposure to 500 lice for eight hours.

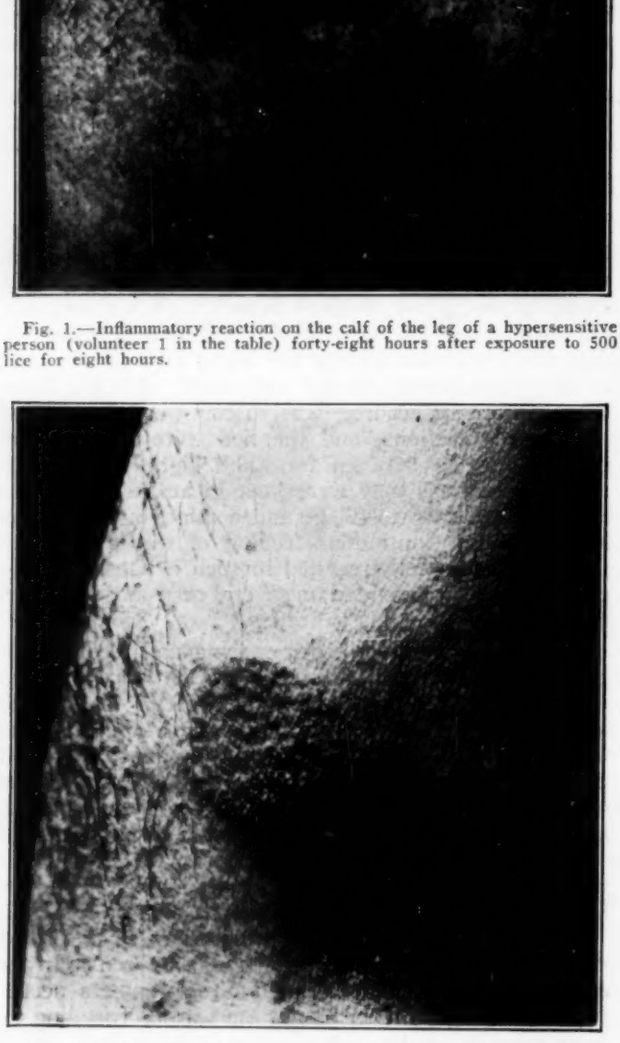

Fig. 2.—Vesicular reaction on arm of a hypersensitive person (volunteer 7) forty-eight hours after exposure to 50 lice for three hours.

Owing to the method of breeding the parasites, it was possible for us to follow the cutaneous reactions produced by mass feedings of from 30 to 2,000 lice at one exposure. In several experiments, 1 to 3 lice were allowed to feed at a time in order to study the effects of single bites. In all, 15 different individuals acted as hosts. Some of the volunteers were observed over a period of six months or more.

EXPERIMENTAL DATA

Cutaneous Reactions Following Louse Bites.—The type and intensity of the local reaction varied not only with the individual but with the number of lice fed and the length of time over which the feedings were continued.

Initial feedings over a period of six days with 30 to 50 lice resulted in pinpoint areas of redness at the site of the bites. When 200 lice were fed daily over this period the petechiae were more numerous. Little or no pruritus was encountered during the first week of exposure. However, local reactions were intensified following more prolonged exposure. After feeding

Fig. 3.—Purpuric reaction on the calf of the leg of a nonsensitive person (volunteer 6) after eight hours' exposure to 500 lice.

periods from seven to seventeen days the immediate reaction consisted in a diffuse redness or scattered papular urticarial lesions. After twelve to twenty-four hours the erythema increased in intensity and an edema developed with an elevation of the exposed area above the surface of the skin. This reaction became more pronounced during the next forty-eight to seventy-two hours (fig. 1). The erythema could be made to fade out on diascopic pressure. Vesicles appeared in some cases at the height of the reaction (fig. 2). As the lesions became older they assumed a more cyanotic appearance and the livid color failed to disappear on pressure. After twelve to fourteen days there was a fading of the lesions with brownish pigmentation and fine scaling.

The pruritus usually became evident after the seventh day. In some cases redness and pruritus reappeared in old lesions following the exposure of new areas to

200 to 600 lice. Furthermore, the application of light friction to old lesions frequently reelicited pruritus which had subsided several weeks previously.

Individual variation in the reaction to the bites of the lice is illustrated by the following case descriptions.

One volunteer (5 in the table) fed increasing numbers of lice for a period of fifty days. During the last twenty-five days of this period, approximately 2,000 lice were fed each day. The local inflammatory reaction became increasingly severe. Finally she developed a generalized papular eruption and the feedings had to be discontinued. Several days later she fed a single louse on the forearm, as a result of which the generalized eruption reappeared.

Two of the subjects developed a definite inflammatory reaction following the first feeding of 50 lice. One of them had had pediculosis pubis five years previously, but the other had no history of louse infestation. Another volunteer, who had had Phthirius pubis infestation in 1925, showed the same type of sensitization as did the majority of the other subjects, since a definite inflammatory reaction was not manifested until approximately 50 lice had been fed daily for seven days.

Two of the subjects (4 and 6 in the table) exhibited relatively little inflammatory reaction and pruritus from the louse bites although they fed 300 to 500 lice daily over a period of months. After one month, one of these persons (4) developed at the feeding sites a moderately diffuse erythema with some pruritus. Over the succeeding months, daily feedings continued without intensification of the local lesions. This person gave practically negative skin reactions to the louse antigens, as shown in the table. The other volunteer (6) suffered slightly from pruritus and had a moderate petechiation at the site of the bites. Other than the development of purpura in twenty-four to forty-eight hour lesions, there was no increase in the reaction. The appearance of a hemorrhagic reaction greater than noted in the other volunteers may be due to the fact that platelet count of the subject on several occasions was found to be 320,000 (fig. 3). He also gave a negative skin test to the louse antigens.

No subjective symptoms other than pruritus were noted in any of our test subjects. Neither were we able to demonstrate a rise in temperature or an adenopathy in any one of them even when 2,000 lice were fed daily.

The Effect of Individual Bites.—Since it was thought that the mass feeding experiments might mask clinical types of lesions which are actually produced in the course of louse infestations, feedings with single lice were carried out on the eighth volunteer, who had had Phthirius pubis infestation five years previously and who had exhibited a vesicular reaction following his first exposure to 50 lice on Dec. 29, 1942. On Jan. 26, 1943 3 lice were allowed to feed, and on January 27, 28, 29 and 30 and February 2, 3 and 9, a single louse was permitted to feed on his forearms. The same female louse was used in the last four feedings.

After the act of feeding was completed there could be seen a pinpoint area of redness located at or near a pore; occasionally no change was seen as a result of the bite. In about eighteen to twenty-four hours a definite papule about 2×2 mm. in diameter developed at the site of the bite and pruritus was felt. At the end of forty-eight hours the papule became somewhat elevated and the itching became more pronounced and persisted for about four days. By the end of a week only a minute brownish pinpoint area persisted at the site of the bite. All subsequent feedings followed approximately the same pattern. The itching, which was never continuous but which would recur at intervals, was out of all proportion to the size of the lesion.

It could not be deduced whether sensitization occurred from several single louse bites, since each bite seemed to follow about the same pattern. Furthermore, the eighth volunteer was no doubt already hypersensitive. However, it is apparent that the cutaneous reactions following mass feedings differed only quantitatively from those produced in a hypersensitive person by a single louse.

Cutaneous Reactions with Feces and Head Antigens, March 16, 1943

No. of Volunteers	Antigen	Reaction after 24 Hrs.	Reaction after 72 Hrs.	Comment
1	F 1	++	+++	Reaction still present with severe pruritus for a week after intradermal injection; highly sensitive patient; last feeding in February 1943
	F 2	++	+++	
	H	++	+++	
2	F 1	++	+	Last feeding 5 days previously; has been feeding lice since 12/11/43; vesicular reaction to lice bites
	F 2	0	0	
	H	0	0	
3	F 1	++	+	Fed lice just before the test; has been feeding lice since 12/18/42; pronounced local reaction following lice bites
	F 2	++	+	
	H	+	±	
4	F 1	±	0	Fed lice just before the test; has been feeding lice since 11/30/42; relatively insensitive to lice bites
	F 2	0	0	
	H	±	0	
5	F 1	++	+	Fed lice 4 days previously; when feeding was resumed after tests had become negative the previous test sites flared again
	F 2	+	±	
	H (not done)			
6	F 1	0	0	Fed lice day of test; relatively insensitive to lice bites
	F 2	0	0	
	H	0	0	
7	F 1	++	++++	Vesicles finally developed at F 1 in 72 hours; primary reaction to lice bites was vesicular; had Phthirius pubis 5 years previously
	F 2	±	+	
	H	+	+	
8	F 1	++	+++	Decidedly sensitive; develops vesicular reaction from lice bites
	F 2	+	±	
	H	+	±	
Controls:				
1	F 1	0	0	No previous infestation with lice
	F 2	0	0	
	H	0	0	
2	F 1	+++	+	Had Phthirius pubis a few days before tests were made
	F 2	+	±	
	H	++	±	
3	F 1	0	0	No previous infestation with lice
	F 2	0	0	
	H	0	0	
4	F 1	0	0	Phthirius pubis 8 years ago
	H	0	0	
5	F 1	0	0	No previous infestation with lice
	H	0	0	
6	F 1	0	0	No previous infestation with lice
	H	0	0	
7	F 1	0	0	No previous infestation with lice
	H	0	0	

F 1, feces antigen autoclaved; F 2, Seitz filtered feces antigen; H, head antigen.

0, no reaction; ±, area of redness little less than 1 cm. not raised above skin level; +, area of redness 1-2 cm., some induration; ++, area of redness 2-3 cm., some induration; +++, area of redness 2-3 cm., pronounced induration; area of redness 1.5-2 cm. studded with papules and surrounding zone of erythema; ++++, area of redness 2-3 cm. studded with papules and vesicles, indurated usually with surrounding erythema.

SKIN TESTING WITH FECES AND HEAD ANTIGENS

Antigens for skin testing were prepared from the feces and from the heads of lice in an attempt to study the pathogenesis of the sensitivity which developed after repeated exposures.

Head Antigen.—One hundred and fifty heads of lice removed at a point immediately anterior to the prothorax were ground in a sterile mortar, and 10 cc. of 1 : 12,500 merthiolate solution was added and the material further ground. The material was then centrifuged at high speed and the supernatant fluid was incubated

at 37 C. for twenty-four hours. Aerobic and anaerobic cultures were made and proved to be sterile.

Feces Antigens.—Feces deposited by the lice overnight were collected from the colonies and placed in a desiccator for twenty-four hours. They were then sealed and kept in the ice box until used.

Ten cc. of distilled water was added to 40 mg. of the desiccated louse feces. The mixture was ground up thoroughly in a mortar and the resulting mass was centrifuged at high speed. The supernatant fluid was divided into two parts: One part was autoclaved for twenty minutes under 15 pounds pressure. A great deal of material was precipitated and left a clear straw colored fluid. This was again centrifuged and the supernatant fluid was removed and enough 1:1,000 merthiolate solution added to it to make a final concentration of 1:10,000 merthiolate. The second portion was passed through a Seitz filter. About half was lost in the filtration process; the filtered fluid was a light yellowish straw color. Enough 1:1,000 merthiolate solution was added to the filtrate to make the final concentration of merthiolate 1:10,000. Both portions were incubated at 37 C. for twenty-four hours. Aerobic and anaerobic cultures were made which were sterile.

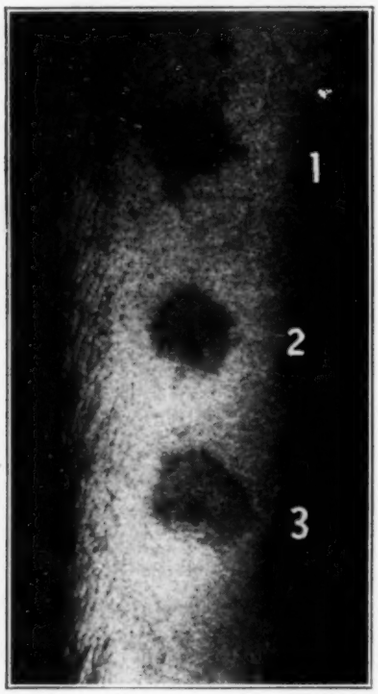

Fig. 4.—Seventy-two hour skin reactions in volunteer 1 following intradermal injection of autoclaved feces antigen at 1, head antigen at 2, and filtered feces antigen at 3.

Cutaneous tests with the antigens previously described were carried out on March 16 on the 8 volunteers who had been used in the louse feeding experiment and on 7 controls. One of the controls (2 in the table) had had Phthirius pubis infestation a few days before he was tested and another (control 4) had Phthirius pubis infestation eight years previously. The other 5 controls had had no infestation with lice as far as we could find out.

In each instance 0.1 cc. of the particular antigen was injected intradermally. The same amount of a 1:10,000 solution of merthiolate in distilled water was used as a control injection. Injections were made on the flexor surface of the forearm.

Following the injection of head or feces antigens there was an immediate reaction in nearly all the cases, including the controls. The head antigen caused an unusual amount of burning pain. In 6 of the volunteers and in 1 of the controls a delayed type reaction was noted in addition to the immediate reaction.

The immediate reaction consisted in the formation of a wheal, which in twenty minutes or longer increased in size with the formation of a zone of erythema. This reaction began to disappear in about an hour or two and there was no trace of it to be seen in twenty-four hours. The delayed type of reaction began to appear after four to twelve hours and reached its peak in twenty-four to seventy-two hours. This reaction persisted for a week in some cases. The delayed reaction was characterized by an area of redness and induration from 1 to 3 cm. in diameter. In unusually sensitive persons, papules and vesicles studded the indurated area and there was a variable surrounding zone of erythema (fig. 4).

It can be seen from the table that the delayed reactions with feces and head antigens were obtained in those persons who exhibited an inflammatory reaction following lice bites. Volunteers 4 and 6, who exhibited purpuric reactions but practically no inflammatory reactions following exposure to lice, gave negative delayed skin reactions with both feces and head antigens. Volunteer 1, who exhibited the most pronounced skin reactions of all our volunteers following exposure to lice (fig. 4), also gave the strongest delayed reaction. The delayed type of reaction therefore is a reaction of sensitivity which develops after exposure to the lice. It resembled that seen in persons exhibiting positive skin reactions after intradermal injection of trichophytin or tuberculin.

The only control to give a positive skin reaction with the feces and head antigens was control 2, who had Phthirius pubis infestation a few days before the tests were made. It would seem that infestation with Phthirius pubis might lead to cross sensitization to Pediculus humanus and/or its feces, since volunteer 6, who had had Phthirius pubis infestation five years previously, developed a vesicular reaction after his first exposure to 50 lice.

Heat did not destroy the skin reactive principle in louse feces. The autoclaved feces antigen was more active than that which passed through the Seitz filter. It has been noted in experiments with other antigens that some of the active principle was lost by filtration.

In no instance was the skin reaction to the head antigens positive when the feces antigen gave a negative reaction, but the reverse was true in a number of instances. Microscopic examination of the heads before preparation of the antigen showed fine particles of feces coating the surface of the head; thus the head antigen actually contained some fecal material. As far as the skin tests were concerned, the head antigen may have acted as a weak feces antigen.

COMMENT

Our findings are in accord with the observations of previous workers that the earliest manifestations of the louse bites are minute red, noninflammatory points which are flat with the skin. In most persons but little pain or itching was experienced during the initial feedings. When large numbers (300 to 500) of the parasites were allowed to feed by the wristlet method, a stinging sensation was sometimes experienced, especially if they were permitted to feed over a previously exposed area.

Repeated exposures to the lice resulted in the development of a hypersensitivity in the majority of persons exposed. Once the hypersensitivity became manifest, a pronounced inflammatory reaction developed at the site of exposure. In most instances it took practically daily exposures over a period of about seven to ten days before hypersensitivity became evident.

The skin reaction following exposure to the lice can be divided into two phases, a purpuric and an inflammatory phase. The introduction of the proboscis and the

act of feeding cause a minute hemorrhage, which clinically is seen as a pinpoint redness. This goes on to an actual purpura from the capillary rupture. The degree of purpuric reaction is dependent on the susceptibility of the capillaries and the tendency of the person to bleed. Among our cases the greatest purpuric reaction was manifested by a person with a relatively low platelet count.

The inflammatory phase of the reaction is due to the hypersensitivity which develops. After single louse bites it was characterized by a papule with some surrounding erythema. When large numbers of lice were fed, the area of skin covered by the bottom of the can became red, edematous, somewhat indurated, raised above the level of the skin and in very sensitive persons studded with vesicles. The reaction reached its height in twenty-four to forty-eight hours and gradually subsided in about five to eight days with fine scaling, leaving a brownish pigmentation.

After the development of hypersensitivity, continued exposure to the lice did not result in a desensitization in the majority of the cases; the inflammatory reaction rather increased with each subsequent exposure. If feedings were discontinued for a week or two, the level of sensitivity dropped in some persons. However, further sensitivity could be induced by subsequent exposures to the lice.

Pruritus became evident and paralleled in its severity the development of the inflammatory reaction. The itching was usually intense. Even in older, already subsided lesions, it could be reelicited by light brushing or scratching. The pruritus developed along with the syndrome of hypersensitivity, since in most individuals it was little in evidence during initial feedings.

No generalized reactions such as malaise, rise in temperature or adenopathy were observed in our cases, even though as many as 2,000 lice were fed daily by a single individual over relatively long periods of time. It is difficult to reconcile our experience with the observations of Nuttall,[4] Jamieson [5] and others,[6] who believed that febrile reactions could be regularly induced by the feeding of large numbers of lice.

While a primary whealing usually followed the intradermal injection of antigens prepared from louse heads and feces, even in individuals who had no previous exposure to lice this promptly disappeared and was followed by a typical reaction of the delayed type which reached its height in twenty-four to seventy-two hours in persons developing a hypersensitivity after repeated exposures to lice. The positive skin reactions were greatest in those persons who manifested the most pronounced inflammatory reaction after exposure to the lice, while the skin reactions were negative in those persons who did not develop an inflammation following the bites. The head antigen was relatively less potent than the feces antigen, but the relative potency of the two antigens is difficult to compare, since equivalent amounts of feces and heads were not used and because by our method of preparation the head antigen also contained a very small quantity of feces. In this connection an attempt to dissociate the feces antigen from the head antigen might be made by desensitizing with feces antigen alone. However, we have not attempted such tests.

To our knowledge previous workers have not considered the possibility of the feces playing a role in the pathogenesis of the skin irritation following louse infestations. However, it would appear that the sensitivity which develops after repeated exposures to lice is associated with presence of the feces. Our experiments throw no light on the question of sensitization being produced by the act of feeding. However, the head antigen never gave a positive skin test when the feces antigen resulted in a negative test. This fact would seem to offer evidence concerning the more important role of the feces in the production of sensitivity. It seems to us that it might be of practical importance to make sure that all of the feces is removed from the clothing of infested individuals as part of the delousing process where practical.

SUMMARY AND CONCLUSIONS

1. Repeated exposures to the body louse will result in the development of a dermal hypersensitivity to it in the majority of those exposed.

2. The feces of the louse play an important role in this induced reaction.

3. There are apparently two components to the "louse bite reaction"; viz.: (*a*) The purpuric element due to the act of feeding and (*b*) the development of an inflammatory reaction following sensitization.

4. The pruritus accompanying infestation with lice seems to be mainly a part of the syndrome of hypersensitivity.

A TREATMENT FOR PEDICULOSIS CAPITIS

WILLIAM A. DAVIS, M.D.
NEW YORK

As part of a general program to devise methods for the control of typhus fever a systematic study was undertaken with a view to determining the louse-killing properties of various chemical agents. My purpose in this paper is to present results obtained by the use of some of these chemical agents in the control of head lice (Pediculus humanus capitis [Linnaeus] Retzius).

The older methods for the control of head lice can be found in various textbooks [1] and in Buxton's little monograph "The Louse." [2] Objections to these treatments arise almost as they are described. Shaving the scalp is effective but hardly appealing. Soaking the hair for an hour in 70 per cent alcohol, 2 per cent phenol, veratrine, larkspur, vinegar or similar preparations is time consuming and only too often ineffective or irritant. Essential oils are effective in adequate dosage but expensive and odorous. Kerosene, crude petroleum and xylene similarly are liable to leave an odor unless washed out thoroughly and are unpleasant. The fumigation of the scalp by sulfur dioxide, mentioned by Buxton as a common practice in Germany, is clumsy and leaves the head immediately susceptible to reinfestation. The removal of head lice by a fine-toothed comb is tedious, to say the least. Probably the best of the older methods is the inunction of the scalp with ointment containing such agents as xylene, pyrethrum or rotenone. More recently Busvine and

From the Laboratories of the International Health Division of the Rockefeller Foundation.

1. Craig, C. F., and Faust, E. C.: Clinical Parasitology, Philadelphia, Lea & Febiger, 1940. Goodman, L. S., and Gilman, Alfred: The Pharmacological Basis of Therapeutics, New York, Macmillan Company, 1941. Musser, J. H.: Internal Medicine; Its Theory and Practice, Philadelphia, Lea & Febiger, 1938. Riley, W. A., and Johannsen, O. A.: Medical Entomology; A Survery of Insects and Allied Forms Which Affect the Health of Men and Animals, New York, McGraw-Hill Book Company, Inc., 1938.

2. Buxton, P. A.: The Louse; An Account of the Lice Which Infest Man, Their Medical Importance and Control, Baltimore, Williams & Wilkins Company, 1940.

Buxton [3] have incorporated thiocyanates in ointments and report excellent results. Yet such grease may be unpleasant or tedious to rub into women's hair. The ideal method for treating pediculosis capitis should be by a lotion, since only a liquid can easily penetrate the entire hair and leave a residual for prolonged action. The fluid should rapidly kill lice and nits, should not have unpleasant properties such as greasiness, staining or odor, and should be both cheap and lasting. Systematic laboratory studies revealed several materials with these properties. Phenyl cellosolve and benzyl cellosolve [4] were the most efficient and were readily available. Preliminary trials indicated that, if a 10 per cent concentration of these cellosolves was put onto cloth, it killed all lice on the cloth in less than three hours; nits exposed to the same dosage failed to hatch. A 40 per cent concentration of phenyl cellosolve placed on the head was not irritant and could be detected for about four days. Therefore, clinical trials of these agents were made. For simplicity only phenyl cellosolve was used on human beings.

RESULTS OF CLINICAL APPLICATION

Results of Trial on Children.—Through the courtesy of Dr. Robert E. Cox, resident pediatrician at Bellevue Hospital in New York, a lotion for the treatment of pediculosis capitis was tried on more than 50 children who were hospitalized for various reasons. The material was applied as soon as lice were discovered, and the nurses reexamined the children at intervals throughout their hospital stay. The lotion included methyl salicylate as a perfume, because this essential oil gave it a "clean smell."

The formula used was phenyl cellosolve 40 per cent, ethanol 30 per cent, water 25 per cent and methyl salicylate 5 per cent. The nurses were asked to apply the lotion to the head so that the hair was thoroughly wet and cautioned to keep the fluid out of the eyes and mouths of the children. No further treatment was used. The results were quite satisfactory. No live lice were ever found after a single treatment. No irritation was observed except a brief mild tingling if the lotion was rubbed into the scalp.

Results of Trial in Mexican Villages.—In cooperation with the Mexican Department of Public Health, studies on the delousing of entire villages were made. The eradication of head lice constituted a part of a general program, which will be reported elsewhere in collaboration with Drs. Malo Juvera and Hernandez Lira of Mexico. In all, 1,278 persons were treated. Of these, 989 were known to have head lice. The treatments were made in the homes by nurses and sanitary inspectors who had been trained in the technics of delousing.

The formula used was phenyl cellosolve 1 gallon, ethanol 2 gallons, water 2 gallons and methyl salicylate (to give a slight odor). While it was impossible to be sure that every louse on every head was killed, it seemed likely that this was the result. About 200 heads were examined a week after treatment and not a single louse was found. No more examinations were made because such searching was not tactful and because it was impossible to be sure that there were no lice in the long hair of the women. Probably the best evidence for the effectiveness of the lotion came from the subjects, who regularly stated their satisfaction with the head lotion though they were candid enough on other treatments. Soon after the public health workers had left the house the treated people could be seen examining one another's heads. Fortunately the material so stunned the lice that they appeared dead or sick in a few minutes. This dramatic effect was helpful in carrying on the program of delousing.

3. Busvine, J. R., and Buxton, P. A.: A New Method of Controlling the Head Louse, Brit. M. J. 1: 464-466 (April 11) 1942.

4. Cellosolve is the trade name for certain solvents made by the Carbon and Carbide Chemicals Corporation; phenyl and benzyl cellosolves are, respectively, the monophenyl and monobenzyl ethers of ethylene glycol.

COMMENT

The chief advantages of the lotions described were ease of application, rapidity of action, freedom from irritant action and efficiency against both insects and eggs. The cost was about 1 cent per treatment in Mexico. The disadvantages were slight. Nits were left on the hair. The lotions produced a moderate burning if applied to such tender areas as the eyes, mouth or perineum. The preliminary laboratory trials suggested that the cellosolve left the hair in a few days.

It is obvious that many more formulas can be prepared which are similar to those described. Other perfumes, such as eucalyptus oil, may be substituted for methyl salicylate. The shipping space of the lotion can be reduced by eliminating alcohol and producing an emulsion by means of a detergent. The long-lasting insecticide "G. N. B." (α,α-di[4-chlorophenyl]-β,β,β-trichlorethane) can be incorporated in either of the cellosolves or benzyl benzoate and used in the form of an emulsion. A number of these alternative formulas have been prepared and tested in the laboratory, and plans are under way to test them on human beings in the near future.

No suggestion is made that the lotions described constitute the only effective treatment of pediculosis capitis, but it is emphasized that the usual methods for killing pediculi are clumsy and relatively ineffective, and the type of lotions described should be generally adopted for the eradication of head lice.

SUMMARY

As a result of studies on chemical agents which kill lice, a number of lotions have been prepared which are rapidly effective against head lice and their eggs, are cheap and easy to use, and possess almost no unpleasant properties.

Two lotions, the formulas of which are given, proved to be quite satisfactory for the treatment of pediculosis capitis on children in an American hospital and on civilian populations in Mexico. They are recommended for general use in the control of head lice.

Prevention of Infectious Disease.—In order to prevent infectious disease the first important step is to determine the natural history of the causative organism, and this of course includes the means of access to the body. Some organisms are conveyed by food or drink, or through the air. Others enter the body as the result of direct contact of the skin tacked with the malignant pustule of anthrax—primarily a disease of animals—which develops on the back of the neck where the infected hides are most liable to rub. The same disease sometimes attacks the faces of people who are unfortunate enough to have bought and used unsterilized and infected shaving brushes. Wool sorters, on the other hand, are more likely to develop the disease in their lungs, since they are constantly inhaling quantities of dust which sometimes contains spores of the anthrax bacillus.—Haagensen, C. D., and Lloyd, Wyndham E. B.: A Hundred Years of Medicine, New York, Sheridan House, Inc., 1943.

EFFECT OF STORAGE OF CITRATED BLOOD ON THE SURVIVAL OF TRANSFUSED ERYTHROCYTES

JOSEPH F. ROSS, M.D.
AND
MILAN A. CHAPIN, PH.D., M.D.
BOSTON

The radioactive isotope of iron Fe^{59} is metabolized by the human organism exactly as ordinary iron and, when fed to or injected into persons with the hypochromic anemia of iron deficiency, is incorporated into the hemoglobin of newly formed erythrocytes.[1] Once built into the hemoglobin molecule of an erythrocyte, radioactive iron does not exchange with the iron of the serum or the tissues [2] but remains within the red blood cell during its entire lifetime and is liberated only when the cell is broken down and destroyed. The physical property of radioactivity does not influence the morphologic aspects or the function of the erythrocyte in any way but serves to "label" or "tag" the cell during its lifetime. It is possible to detect quantitatively the radioactive iron of such labeled cells even though they may be mixed with thousands of cells containing no radioactive substance.[3]

When erythrocytes labeled with radioactive iron are transfused into compatible human subjects they rapidly mix with the recipient's cells and can be detected quantitatively in samples of the recipient's blood. If these tagged cells are destroyed after transfusion, the concentration of radioactively labeled cells in the recipient's blood progressively decreases, and the radioactivity determined on consecutive samples of the recipient's blood will reveal the rate at which the transfused cells are destroyed. The effectiveness of various blood preservatives can thus be evaluated by observing their influence on the survival of transfused tagged erythrocytes.

We have studied the effect of the storing of citrated blood on the survival of transfused erythrocytes, and we present our observations as illustrative of the technic as well as of the adverse effect of sodium citrate as a blood preservative.

METHODS AND PROCEDURE

Iron containing the radioactive isotope Fe^{59} was fed as ferrous sulfate or injected intramuscularly as ferrous ammonium citrate into patients with the hypochromic anemia of iron deficiency.[4] As indicated in chart 1, the radioactive material was rapidly incorporated into the hemoglobin of newly formed erythrocytes. The maximum concentration of radioactivity achieved in these experiments was 2,000 counts [5] per minute per cubic centimeter of packed erythrocytes.

After sufficient radioactive iron had been incorporated into the erythrocytes of such donor subjects, venesection was performed aseptically, and the blood was drawn into sterile 2.5 per cent sodium citrate solution with a p_H of 7.4. The final concentration of sodium citrate at completion of the venesection was 0.25 Gm. per hundred cubic centimeters of blood.

This donor blood was immediately divided into 55 cc. aliquots and placed in sterile 150 cc. Erlenmeyer flasks stoppered with gauze and nonabsorbent cotton. The flasks were stored in the dark in a refrigerator at a temperature of 10 C. Hematologic studies and determinations of radioactivity were carried out on aliquots of this blood.[3]

After storage for periods varying from one to fourteen days, 40 or 50 cc. aliquots of this labeled blood were injected intravenously into healthy human adults (interns and technicians) all of whom showed normal red cell and hemoglobin levels. Solutions of Evans blue dye (T-1824) were injected immediately prior to the injections of blood, so that the plasma volume could be determined by the method of Gibson and Evelyn.[6] At varying intervals of time after the injection of the blood and dye, samples of venous blood were removed without hemostasis from an antecubital vein of the opposite arm. A portion of each sample was placed in a chemically clean calibrated centrifuge tube and allowed to clot, and the remainder was placed in a tube containing the oxalate mixture of Heller and Paul.[7]

Complete hematologic studies and determinations of the dye content of the serum [6] and of the concentration of radioactive iron in the blood and in the cell mass were made on each sample of blood.[3] The total blood and cell volumes were calculated by the method of Gibson and Evelyn.[6] The total radioactivity in circulation at the time each sample was withdrawn was calculated from the formula:

$$\text{Total radioactivity in circulation} = \text{Radioactivity per cubic centimeter of blood} \times \text{total blood volume}$$

The percentage of the total transfused radioactively tagged cells in circulation at any given time was calculated from the formula:

$$\text{Per cent of transfused radioactivity in circulation} = \frac{\text{Total radioactivity in circulation}}{\text{Total radioactivity of the transfused blood}}$$

Determinations of the radioactivity of aliquots of the transfused blood always were made in conjunction with similar determinations on samples of the recipient's blood, eliminating the necessity of corrections for decay of the radioactive iron and counting tube variation.

RESULTS

Charts 2 and 3 illustrate the effect of storage of citrated blood on the survival of transfused erythrocytes. The number of days that the blood was stored before transfusion is indicated by the circled numbers. In the first series of experiments (chart 2) each recipient received 40 cc. of the labeled blood. This blood contained 9.6 cc. of red blood cells and 2.45 Gm. of hemoglobin. The maximum age of the labeled erythrocytes from the time of formation until removal from the donor by venesection was fifty-one days (since the first dose of radioactive iron had been fed to the donor fifty-one days before the venesection). The donor blood in the second series of experiments (chart 3) was removed from the donor thirteen days after a single intramuscular injection of radioactive iron, and therefore the maximum age of the labeled erythrocytes in this blood was not more than thirteen days. Each recipient in this series of experiments received an injection of 50 cc. of labeled blood containing 21.4 cc. of cells and 5.5 Gm. of hemoglobin.

In both series of experiments the destruction of the transfused erythrocytes was rapid immediately after injection but subsequently progressed at a slower and steadily decreasing rate. This suggests that some of the stored erythrocytes were more resistant to destruc-

From the Evans Memorial, Massachusetts Memorial Hospitals, and the Department of Medicine, Boston University School of Medicine.

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2. Hahn, P. F.; Bale, W. F.; Ross, J. F.; Hettig, R. A., and Whipple, G. H.: Radio Iron in Plasma Does Not Exchange with Hemoglobin Iron in Red Cells, Science **92**: 131 (Aug. 9) 1940.

3. Ross, J. F., and Chapin, M. A.: The Electrolytic Separation of Radioactive Iron from the Blood, Rev. Scient. Instruments **13**: 77 (Feb.) 1942.

4. The radioactive isotope of iron was prepared by deuteron bombardment of iron phosphide probes in the Harvard cyclotron through the aid of Dr. B. R. Curtis.

5. The counts are those recorded with a modified Geiger-Müller counter and scaling circuit.

6. Gibson, J. G., and Evelyn, K. A.: Clinical Studies of the Blood Volume: IV. Adaptation of the Method to the Photoelectric Microcolorimeter, J. Clin. Investigation **17**: 153 (March) 1938.

7. Heller, V. G., and Paul, H.: Change in Cell Volume Produced by Varying Concentrations of Different Anticoagulants, J. Lab. & Clin. Med. **19**: 777 (April) 1934.

tion than others, but such an interpretation must be made with reservations. As noted in a later paragraph, a few hours after transfusion the radioactivity of the red cell mass represents not only the survival of transfused erythrocytes but the presence of newly formed red cells as well. The number of such newly formed

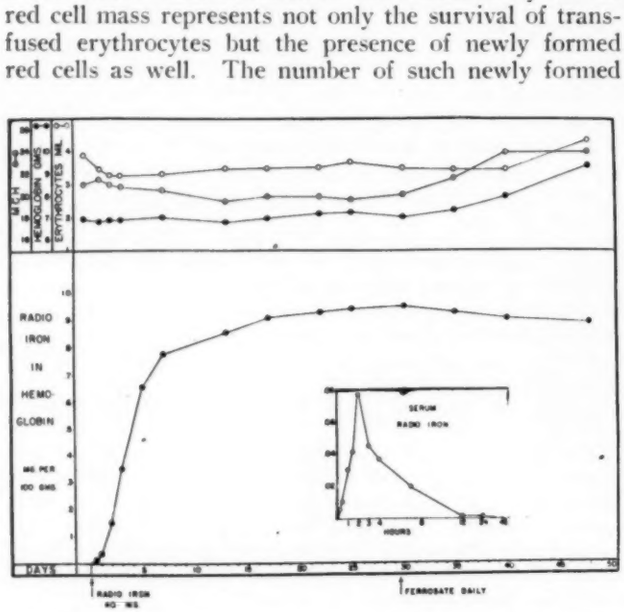

Chart 1.—Incorporation of radioactive iron in the hemoglobin and erythrocytes in a case of hypochromic anemia of iron deficiency. Iron containing the radioactive isotope Fe^{59} was fed as ferrous sulfate.

cells is quite small for a period of several days, however, and we believe that the concentration of radioactivity in the erythrocytes during this time is a qualitative indication of the survival of transfused cells.

Prolongation of storage greatly increased the rate of destruction of the transfused cells, and the percentage surviving for twenty-four hours varied inversely with the length of storage time as illustrated in chart 4.

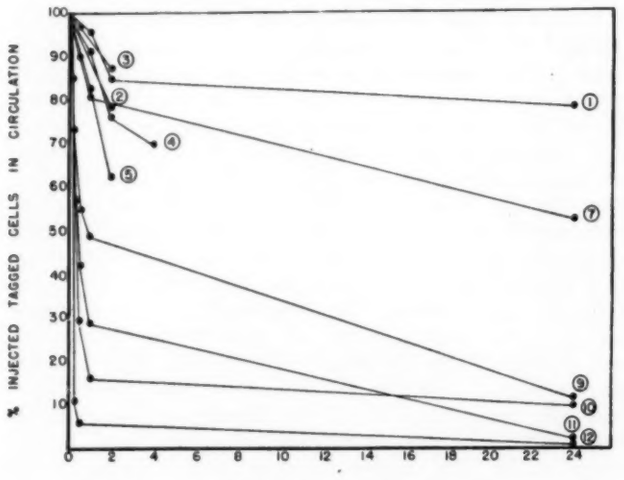

Chart 2.—The post-transfusion survival of erythrocytes stored in citrated blood. The circled numbers indicate the number of days the citrated blood was stored prior to transfusion.

The slightly more rapid destruction of the transfused cells in the first series of observations (chart 2) may be related to the fact that the maximum age of the transfused labeled erythrocytes in this series was almost four times greater (51 days) than the maximum age (13 days) of the labeled cells in the second series of observations (chart 3).

In the second series of experiments the determinations of erythrocyte radioactive iron concentration were made several days after the transfusion of radioactively labeled cells. After the initial decrease in radioactive iron concentration, which continued for approximately twenty-four hours, the concentration of radioactive iron in the red cells began to increase (chart 5). This increase was definite in each case studied and occurred at a fairly constant rate.

These changes in concentration of radioactivity might be explained by assuming a temporary immobilization and eventual release of the transfused tagged erythrocytes. Since there is considerable evidence that there is no storage site or reservoir for red blood cells and that all erythrocytes are in active circulation at all times,[8] it appears unlikely that the pronounced changes in concentration of radioactive iron can be accounted for on the basis of a temporary storage of cells. It appears much more probable that the rapid decrease in concentration of radioactivity immediately following transfusion represents destruction of transfused cells

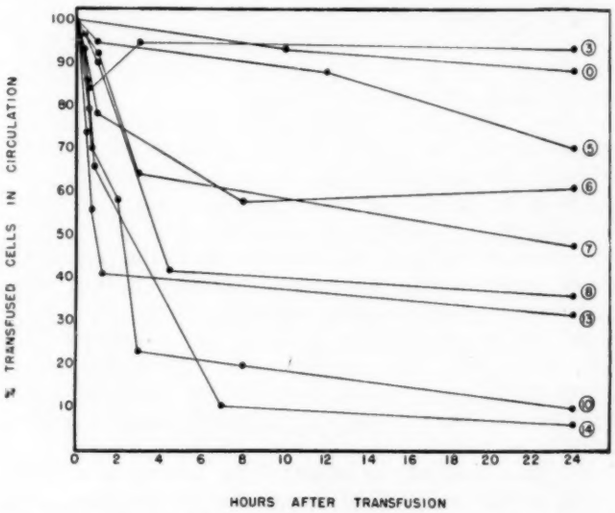

Chart 3.—The post-transfusion survival of erythrocytes stored in citrated blood. The circled numbers indicate the number of days the citrated blood was stored prior to transfusion.

and that the subsequent progressive increase represents a reutilization of the labeled iron originally contained in the transfused cells. The iron liberated from destroyed erythrocytes appears to be used for the synthesis of hemoglobin in preference to and more rapidly than the iron present in the blood plasma, the tissue reserves or foodstuffs. This observation raises a question as to whether or not some of the products of hemoglobin breakdown can be reused for the synthesis of hemoglobin while still in a fairly complex state and without being completely broken down. Somewhat similar observations have been reported by Cruz, Hahn and Bale,[9] who observed rapid reutilization of erythrocyte radioactive iron for the synthesis of hemoglobin after the acute hemolytic anemia of acetylphenylhydrazine poisoning.

8. Hahn, P. F.; Ross, J. F.; Bale, W. F.; Balfour, W. M., and Whipple, G. H.: Red Cell and Plasma Volumes (Circulating and Total) as Determined by Radio Iron and by Dye, J. Exper. Med. **75**: 221 (Feb.) 1942. Ross, J. F., and Chapin, M. A.: The Absence of Erythrocyte Reserves in Human Subjects as Indicated with Radioactive Tagged Cells, J. Clin. Investigation **21**: 640 (Sept.) 1942.

9. Cruz, W. O.; Hahn, P. F., and Bale, W. F.: Hemoglobin Radioactive Iron Liberated by Erythrocyte Destruction (Acetylphenylhydrazine) Promptly Reutilized to Form New Hemoglobin, Am. J. Physiol. **135**: 595 (Feb.) 1942.

The conservation of the hemoglobin-radioactive iron of transfused blood cells is illustrated in chart 6, which also demonstrates the feasibility of following the fate of the radioactive iron of transfused cells in the circulation over long periods. In this experiment blood containing radioactively tagged cells was transfused into a patient with paroxysmal nocturnal hemoglobinuria and the concentration of radioactivity per unit volume of blood and of cells was followed over a period of four months. In spite of wide variations in the hematocrit reading and in the concentration of radioactivity in the red cells, the concentration of radioactivity in the whole blood was fairly constant for almost four months.

COMMENT

The value of a blood preservative must be judged not by its ability to prevent in vitro hemolysis, changes in osmotic fragility, cellular potassium content and so on but by its effectiveness in prolonging the in vivo survival of transfused erythrocytes. The radioactively tagged cell method is particularly suited to evaluating the effectiveness of blood preservatives since it actually allows the number of transfused donor cells surviving

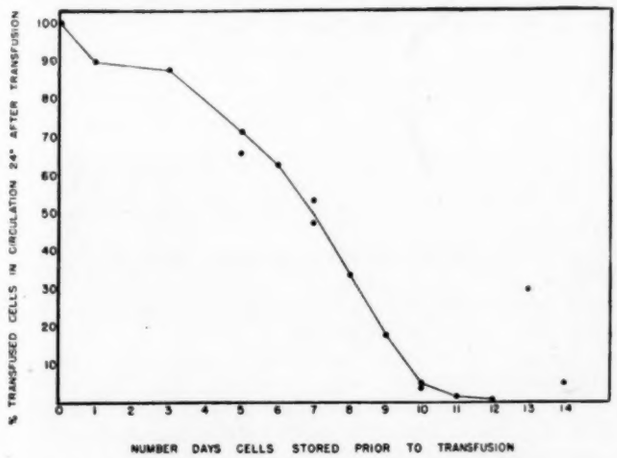

Chart 4.—Effect of storage of citrated blood on the survival of transfused erythrocytes.

in the recipient to be quantitatively determined. The technic is so sensitive that 0.0005 cc. of transfused cells can be detected in 1.0 cc. of the recipient's blood with an accuracy of ± 10 per cent, and the total volume of labeled cells which needs be injected into the recipient is so small that it produces no hemodynamic or hemopoietic disturbance.

It is apparent from our studies that the breakdown products of hemoglobin are rapidly reutilized for the synthesis of new hemoglobin. This rapid reutilization of radioactive iron from destroyed transfused cells makes it impossible to trace with accuracy the survival of these cells for more than forty-eight hours after transfusion. In most instances, however, it is the initial twenty-four to forty-eight hours after transfusion in which the survival of transfused cells is of greatest importance.

The rapid reutilization of hemoglobin breakdown products is of considerable practical as well as theoretical interest, since it indicates that even though transfused cells are rapidly destroyed they are of distinct therapeutic value in promoting blood formation. As already mentioned, the rapid and preferential reutilization of iron from destroyed erythrocytes suggests that the hemoglobin molecule may be built up from fairly complex remnants of destroyed hemoglobin.

Storage of citrated blood exerts a deleterious effect on erythrocytes. When continued for six days only 50 per cent of the transfused cells survived for twenty-four hours, and when storage was prolonged for ten

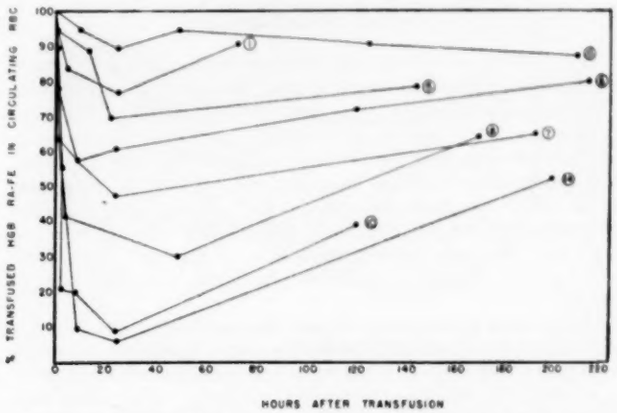

Chart 5.—The reutilization of radioactive iron from destroyed transfused erythrocytes. The circled numbers indicate the number of days the citrated blood was stored prior to transfusion.

days or longer less than 10 per cent of the cells survived for twenty-four hours. These observations corroborate the findings of other investigators[10] that citrated blood is unsatisfactory for blood transfusion when stored for more than two or three days.

SUMMARY

1. The survival in vivo of transfused erythrocytes and the effectiveness of blood preservatives in prolonging such survival can readily be determined by the use of donor red blood cells labeled with radioactive iron.

2. The storage of citrated blood exerts a deleterious effect on the survival of transfused erythrocytes. The survival of these erythrocytes varies inversely with the duration of storage.

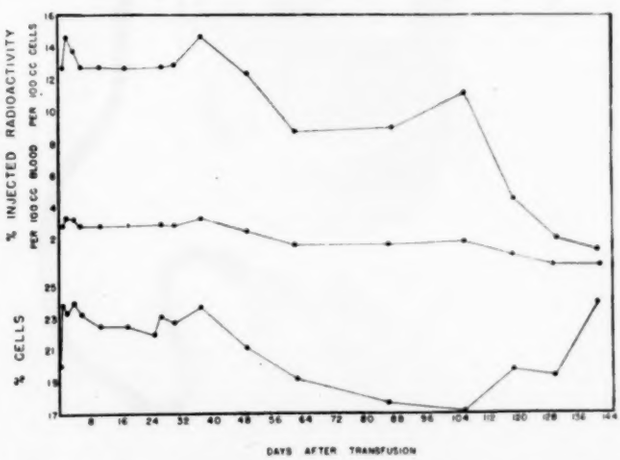

Chart 6.—The conservation of the radioactive iron of transfused erythrocytes.

3. The iron of destroyed transfused erythrocytes is rapidly and preferentially reutilized for the synthesis of hemoglobin.

65 East Newton Street.

10. Belk, W. P., and Barnes, B. C.: The Survival Time After Transfusion of Erythrocytes of Citrated Human Blood Stored at 4 to 6 Centigrade, Am. J. M. Sc. **201**: 838 (June) 1941. Strumia, M. M.: The Fate of Transfused Refrigerated Blood and the Problem of Blood Banks, S. Clin. North America **22**: 1693 (Dec.) 1942.

Clinical Notes, Suggestions and New Instruments

PROTECTION AGAINST WELDING FUMES

A NEW COMPRESSED AIR UNIT FOR VENTILATING WELDERS' HOODS

L. R. KRASNO, PH.D.; R. J. DE MOTTE, M.D., AND A. C. IVY, PH.D., M.D., CHICAGO

The deleterious effects of welding fumes, especially those arising from galvanized metals ("galvo fever"), are well known.

Previous methods for protecting the welder have not been satisfactory. The use of a respirator has failed because it is cumbersome and does not fit well beneath the welder's hood. The welder objects to the discomfort of wearing the respirator on his face throughout the working day. Those compressed air ventilating devices for the hood which have been provided to date have not been constructed so as to prevent fumes from entering the hood and to avoid the criticisms and complaints of the welder.

The present compressed air unit for ventilating the welder's hood consists of a metal tube bent to form a rectangle of such dimensions that it may be placed in and attached to the hood so as to surround the glass window completely. The metal tube is perforated along the outer edge of the rectangle with holes 1/32 inch in size and 3/8 inch apart. That is, the perforations direct the flow of air away from the glass window and parallel to the face of all surfaces of the hood (fig. 1). This arrangement is important, because an outward flowing spray of air surrounds the entire field about the nose and mouth and produces a "shelling out" effect of the flow of air which (*a*) prevents fumes from being drawn into the mask, (*b*) avoids drafts on the face and eyes of the welder and (*c*) at the same time prevents sweating and soiling of the eyes.

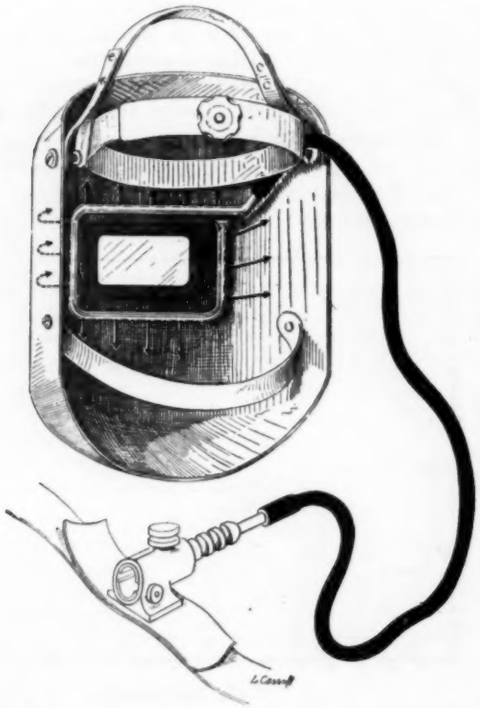

Fig. 1.—Compressed air unit for ventilating welder's hood. Metal tube, surrounding window, directs outward flowing spray of air.

At the primary compressed air source a filter is inserted to trap impurities which sometimes contaminate compressed air lines in industry. This primary filter also serves as a pressure reducing valve. A rubber tube is used to lead the air from the fixed metal outlet to a reducing valve attached to a belt about the waist of the welder. In this way the pull of the rubber tubing does not hamper the welder, a complaint which obtains when the rubber tubing pulls directly against the hood (fig. 2). The reducing valve, which is small, renders it possible for the welder to regulate the rate of air flow into his hood according to his individual likes or needs and any fluctuations of pressure in the main line. This is an important feature, since a perfect device is of no value unless the worker will wear it.

Fig. 2.—Rubber tubing does not pull directly against hood.

Experience with this welder's ventilated hood justifies the following statements:

1. Welding fumes do not enter the hood even when welding directly over and close to the arc.
2. The atmosphere in the mask is cool, which prevents perspiration and soiling of the eyes.
3. A constant supply of "fresh" air is supplied the welder.
4. It prevents the necessity of using alternating shifts of men on galvanized welding jobs.
5. The men like the device and insist on wearing it after once trying it.

303 East Chicago Avenue.

From the Medical Department, Pullman Standard Car Manufacturing Company, and the Department of Physiology, Northwestern University.

SPONTANEOUS HEPATICOGASTRIC BILIARY FISTULA

LIEUTENANT COLONEL H. B. JENKINS
MEDICAL CORPS, ARMY OF THE UNITED STATES

This case is reported for three reasons: (1) No other cases have been encountered in the literature, (2) symptoms which suggested biliary tract disease were absent and (3) any type of biliary fistula in the age group of the patient is rare.

Judd and Burden[1] in 1925, in reporting 153 cases of spontaneous internal biliary fistula from the Mayo Clinic, stated that they were not aware of any cases in the literature in which the fistula originated in the hepatic duct. Dean[2] in June 1939 reported the first case of hepaticoduodenal fistula and Puestow[3] in June 1942 reported a similar case. No other case of spontaneous internal biliary fistula originating in the hepatic duct has been found in the literature.

Spontaneous internal biliary fistulas from any origin terminating in the stomach are rare. Of the 200 cases reported by

From the Surgical Service of the Station Hospital, Camp Gordon, Georgia.

1. Judd, E. S., and Burden, V. G.: Internal Biliary Fistula, Ann. Surg. **81**: 305 (Jan.) 1925.
2. Dean, Gilbert O.: A Discussion of Internal Biliary Fistulas Based on Twenty-Nine Cases, Surgery **5**: 857 (June) 1939.
3. Puestow, Charles B.: Spontaneous Internal Biliary Fistula, Ann. Surg. **115**: 1043 (June) 1942.

Naunyn[4] only 8 involved the stomach, and of the 153 cases in the series of Judd and Burden[1] the stomach was involved in only 6, with all cases in both series originating in the gallbladder. The most frequent fistulas are the cholecystoduodenal, the cholecystocolic, the cholecystogastric and the choledochoduodenal in the order named. Other types have been reported and are relatively rare. The frequency of all types of spontaneous internal biliary fistulas may be deduced from the following reports: 109 fistulas found in 6,263 biliary operations by Bernhard,[5] 43 fistulas in 10,866 routine necropsies by Roth, Schroeder and Schloth,[4] 5 fistulas among 15,677 operative cases in Surgical Section A at the Hospital of the University of Pennsylvania from 1922 to 1929 according to Eliason and Stevens,[6] and approximately 1.2 per cent of all patients with cholecystitis admitted to the University Hospitals of Iowa since 1915 as reported by Dean.[2]

Of the 153 cases reported by Judd and Burden,[1] 111 were in females and most of the cases occurred in the sixth decade of life. All cases occurred beyond the fourth decade with 1 exception, which was in the 20 to 30 year age group. The average duration of symptoms in this series was ten years, but in 1 case the symptoms had existed only one month.

The usual history in spontaneous internal biliary fistula, according to Walters and Snell,[7] is that of chronic cholecystic disease with colic, jaundice and symptoms of acute cholecystitis which are more or less miraculously relieved after a severe attack, indicating that the gallbladder had emptied its contents into the intestinal tract.

The diagnosis of spontaneous internal biliary fistula was made preoperatively in 2 cases of the 153 reported by Judd and Burden,[1] and to date Garland and Brown[8] have reported approximately 90 cases recorded in the literature as diagnosed by x-ray prior to operation.

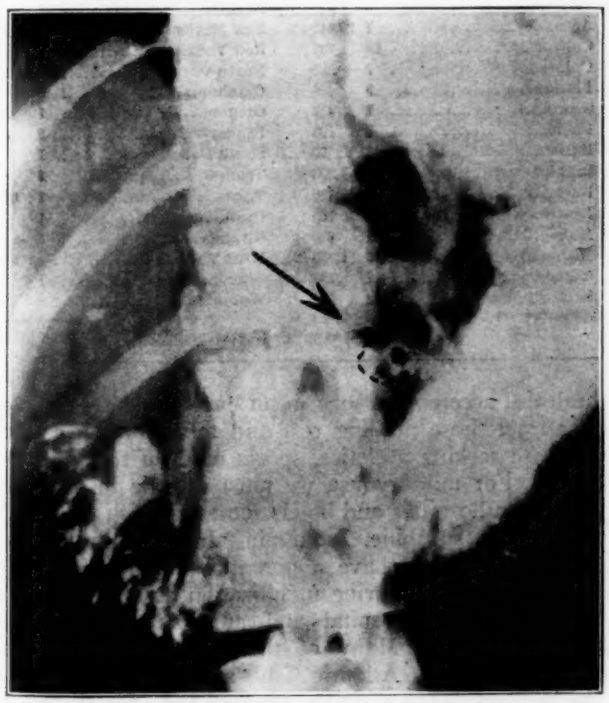

Fig. 1.—Hepaticogastric fistula partly filled with barium.

REPORT OF CASE

A white soldier aged 26, a native of Ohio, with three months' army service, was admitted to the Station Hospital, Camp Gordon, Georgia, at 10:35 a. m., April 11, 1943. The following admission notes were made by the ward surgeon: "The onset of the present illness occurred at about 2 p. m. yesterday with dull pain in the midepigastrium which gradually moved to the right side of the abdomen above McBurney's point and below the gallbladder region. There was no radiation to the back, shoulders or groin. Some nausea and anorexia occurred but no vomiting or diarrhea. The bowels were

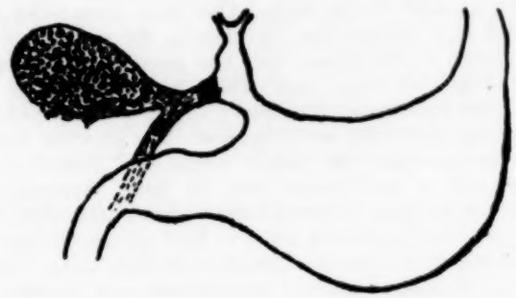

Fig. 2.—Hepaticogastric fistula, stones in hepatic and common ducts, fibrous degeneration of cystic and common ducts and distal portion of hepatic duct, and perforated gallbladder impacted with stones.

normal. There was no dyspepsia or urinary frequency. Appendectomy was done three years ago. The pain was cramping at times for brief intervals since reporting at sick call this morning and it hurt worse on deep breathing. There was a slight nonproductive cough today. No habitual or recurrent dyspepsia had occurred in the past. The patient was never jaundiced. There was no food intolerance. The patient had always been in excellent health and other than measles, chickenpox and whooping cough, which he was told that he had had in early childhood, he could not recall any illness that he had had except one attack of appendicitis in May 1941, for which he had had an immediate appendectomy and from which he made an uneventful recovery, being hospitalized only eight days. He had never had any intolerance to any food, had never had any abdominal pain or distress other than when operated on for appendicitis and with his present illness, had never suffered from constipation or diarrhea and had never had any discoloration of the skin. The patient was well developed and nourished, of slender type, was 6 feet (183 cm.) high and weighed 172 pounds (78 Kg.). All physical findings were negative except slight dulness to percussion and harsh breath sounds at the left posterior base of the lungs and slight spasticity and tenderness of the right abdomen with no point tenderness. A well healed old McBurney incision was noted. Blood pressure was 130/80, temperature 100.4 F., pulse rate 100, respiratory rate 20. The white blood cell count was 18,600 with a differential count showing 65 per cent segmented cells, 29 per cent lymphocytes, 5 per cent eosinophils and 1 per cent mononuclears. Urinalysis was negative."

At 2 p. m. the temperature was 99.8 F. and at 9:30 p. m. was 102 F. with no other changes in the physical findings. X-ray examination of the chest at this time with the patient in the sitting posture showed lungs clear and no air under the diaphragm. At 10:30 p. m. the surgical officer of the day was called to see the patient and in turn called me. At about 10:45 p. m. the patient was in acute distress with breathing short and labored and the abdomen moderately distended with generalized abdominal tenderness but pronounced point tenderness over the gallbladder. There was pronounced right rectus rigidity with increased spasticity over the entire abdomen. The temperature at this time was 98 F., pulse rate 112 and blood pressure 130/80. A tentative diagnosis of general peritonitis due to a perforated perigastric abscess secondary to a penetrating ulcer or due to a perforated gangrenous gallbladder was made and the patient prepared for surgery.

Under closed ether-oxygen inhalation anesthesia a high right rectus incision was made and when the peritoneum was opened

4. Cited by Judd and Burden.[1]
5. Bernhard, cited by Delano, Percy J.: Internal Biliary Fistula, Am. J. Roentgenol. **47**: 298 (Feb.) 1942.
6. Eliason, E. L., and Stevens, L. W.: Spontaneous Internal Biliary Fistula, Am. J. Surg. **51**: 387 (Feb.) 1941.
7. Walters, Waltman, and Snell, Albert M.: Diseases of the Gallbladder and Bile Ducts, Philadelphia, W. B. Saunders Company, 1940.
8. Garland, L. H., and Brown, J. M.: Roentgen Diagnosis of Spontaneous Internal Biliary Fistulas, Especially Those Involving the Common Duct, Radiology **38**: 154 (Feb.) 1942.

a large quantity of pus was evacuated in which there were several gallstones varying in size from 1 mm. to 1.5 cm. in diameter. The gallbladder was firmly impacted with stones, was gangrenous and showed a perforated area about 3 cm. in diameter. The gallbladder was opened widely and over 200 light yellow, faceted stones were removed. The gallbladder was then separated from its bed, beginning at the fundus, and removed. The cystic duct and the common bile duct were identified as solid fibrous cords. One large stone which was embedded in a fibrous cord representing the remains of the distal portion of the hepatic duct just proximal to the cystic duct and another large stone which was embedded in the fibrous cord representing the remains of the common duct just distal to the cystic duct were removed. The proximal portion of the hepatic duct was widely dilated and joined to the anterior wall of the stomach near its lesser curvature and about 6 cm. proximal to the pylorus. This fistulous tract was opened, explored for stones, noted to have an opening into the stomach about 1.5 cm. in diameter and then closed tightly with No. 80 cotton sutures. Sulfanilamide was sprinkled in the operative area, one soft rubber dam drain was left in the gallbladder bed and the abdomen was closed in layers with No. 50 interrupted cotton sutures. The patient received 1,000 cc. of 5 per cent dextrose in isotonic solution of sodium chloride one hour before operation and 1,000 cc. of blood plasma during the operation, which commenced at 12:05 a. m. and ended at 2:15 a. m. Water in quantities desired and tolerated was allowed as soon as the patient reacted from the anesthetic and the patient had an excellent postoperative course without distention or discomfort. The drain was removed on the tenth postoperative day and the patient was allowed out of bed on the twenty-first postoperative day. There was no external bile drainage, but a slight purulent drainage persisted for several weeks until a gallstone about 1 cm. in diameter was extruded through the drain site in the incision.

An extract of the patient's clinical record when hospitalized in a Chicago hospital for appendectomy in May 1941 was obtained, confirming the date and the length of stay in the hospital as given in the history obtained from the patient. The diagnosis of the surgeon and the pathologist in this hospital was acute catarrhal appendicitis. Although the family of the patient visited him shortly after his recent operation, no history could be obtained from the mother or other members of the family of any illness that the patient had ever had other than the illnesses previously recorded in his past medical history. However, the patient, about two months after this recent operation, recalled one other instance, eight years ago, in which he had severe abdominal pain for several hours which caused him to leave a ball park and return to his home. For this pain, which he relates was more severe than that suffered with his attack of appendicitis and during his present illness, he received no hypodermic medication and the pain suddenly ceased the same day, after which he felt perfectly well.

Two months after operation a barium sulfate meal was given the patient and the fistulous tract to the stomach was demonstrated under the fluoroscope. An x-ray plate was made with the patient in a recumbent position (fig. 1) showing the partially barium filled fistulous tract. Figure 2 is a schematic illustration of the findings at operation.

SUMMARY

A case of spontaneous hepaticogastric biliary fistula, the first recorded in the literature, with symptoms vaguely suggestive of biliary tract disease of only thirty-four hours' duration, was observed. A gangrenous, perforated, gallbladder impacted with over 200 stones, complete fibrous obliteration of the cystic and common bile ducts and fibrous obliteration of the distal portion of the hepatic duct and general peritonitis were found at operation. Complete recovery of the patient followed surgical intervention, and roentgenographic demonstration of the hepaticogastric fistula was made two months after the operation.

Special Article

AMERICAN HEALTH RESORTS

THE IMPORTANCE OF HEALTH RESORTS AND THEIR FACILITIES IN MEDICAL PREPAREDNESS

MAJOR GENERAL CHARLES R. REYNOLDS
UNITED STATES ARMY, RETIRED

These special articles on spa therapy and American health resorts were prepared under the direction of the Committee on American Health Resorts. The opinions expressed are those of the authors and do not necessarily reflect the opinion of the committee. These articles may be published later as a Handbook on Health Resorts.

The term health resort is loosely applied to several kinds of institutions quite unlike in their facilities and methods of promoting health as well as their importance in medical preparedness. This term includes hospitals or spas possessed of certain natural therapeutic facilities for the treatment of chronic diseases and, in a sense, other institutions offering convenient, attractive and healthful accommodations in an environment calculated to attract those needing rest and rehabilitation as well as those seeking athletics, sports or even social advantages. For military use we must include in this consideration hospitals and hotels some of which offer little more than sunshine, mountain air and sea breezes. These institutions have a potential military value for housing purposes during mobilization or for conversion into convalescent hospitals and camps as military operations progress. Many of the larger hotels, as for instance those at Atlantic City, are being acquired by the military services at the present time for the establishment of special schools, reception centers and so on. In general, these institutions fit into the military plans only because their physical facilities are readily available where and when needed and not because they are called health resorts.

TABLE 1.—*Spa Facilities According to States, Localities and Accommodations*

Alabama	3	665	Montana	4	300
Arizona	2	119	Nevada	2	74
Arkansas	1	20,412	New Mexico	5	1,161
California	23	4,768	New York	6	10,145
Colorado	2	830	North Carolina	3	175
Florida	3	430	Oklahoma	2	1,030
Georgia	2	457	Oregon	3	350
Idaho	2	180	Pennsylvania	2	855
Illinois	1	75	South Dakota	1	435
Indiana	5	1,955	Tennessee	3	680
Iowa	1	110	Texas	3	1,988
Kentucky	1	165	Utah	1	10
Maine	1	640	Virginia	5	1,493
Michigan	3	2,755	West Virginia	4	1,815
Minnesota	2	155	Wisconsin	1	595
Mississippi	2	310	Wyoming	2	275
Missouri	2	2,084			
			33 states	103	57,491

The use of spas in this country for military purposes has been well considered by Dr. N. Philip Norman[1] and by several more recent surveys of these institutions

1. Norman, N. P.: Mobilizing the Spas and Health Resorts of Our Nation, New York M. J. **108**: 419 (Sept. 7), 463 (Sept. 14), 507 (Sept. 21) 1918; published in book form by A. R. Elliot Publishing Company, 1918. Copyright 1918.

for military purposes being made by the Committee on Health Resorts of the American Medical Association, cited by Dr. Walter S. McClellan, medical director of the Saratoga Spa, in his articles.[2] From the latter source have been taken many data essential in estimating the value of health resorts in medical preparedness, more especially tables 1, 2, 3 and 4, which record the results of the survey by showing spa facilities and location, capacity and therapeutic value. Lists of institutions meeting somewhat the definition of health resorts which have been compiled by the Red Book of the American Hotel Association and by the Hotel Monthly have been consulted.

In table 1 are listed the facilities according to states with the total accommodation for each state having spa facilities. Table 2 shows the number of spas in various states classified according to accommodations. Table 3 lists the states with the greatest accommodations in institutions of 1,000 or more. Table 4 lists the spa facilities according to the several army corps areas.

From a study of these compilations it is found that spas of significant importance are found in one hundred and three localities in thirty-three states, which provide facilities for treating about 57,000 patients.

As to size, there are eleven states having facilities each of which is capable of caring for 1,000 or more patients. These constitute about 85 per cent of available facilities, the greatest concentration amounting to over 70 per cent of such institutions being found in Arkansas, New York and California. The others of varying sizes are located in Michigan, Missouri, Texas, Indiana, West Virginia, Virginia, New Mexico and Oklahoma in approximately that order of importance. It will be seen that territorially their distribution does not coincide at this moment with the greatest concentration of troops, a definite scarcity of accommodations in this respect being noted in the Southeastern states of the Fourth Corps Area. In general, however, it will be seen that a sufficient number of spas of the larger size are fairly convenient for such military use as may be required.

There are a few very significant factors to be taken into consideration in determining the value of the spas for military medical purposes, chief among which is that many of these institutions do not house their patients, the immense majority of whom seek living accommodations in nearby hotels and boarding houses while undergoing treatment at the spa. Few of the spas or health resorts are professionally staffed but rely largely on the local profession for the care of the patients undergoing treatment. Some are not open the year round. There is no question about their ability to treat a very large number of patients at one time. For instance, New York State can care for 10,000, one-half of whom can be treated at the Saratoga Spa. However, practically none of the health resorts are staffed, administratively organized and possessed of sufficient housing, hospital facilities and utilities to function as general hospitals or as large special hospitals in the general scheme of military hospitalization, certainly not without remodeling and reorganization.

USE OF HEALTH RESORTS IN MEDICAL PREPAREDNESS

The use of health resorts in medical preparedness will be considered from the standpoint of the military forces and the civilian population.

2. McClellan, W. S.: Role of Spas in Medical Preparedness, Arch. Phys. Therapy **22**: 656 (Nov.) 1941; New York State J. Med. **42**: 786 (April 15) 1942.

To understand the situation regarding the use of special hospitals, such as spas or civilian hospitals in general, it is necessary to be acquainted with the general plans of hospitalization in the military establishment. It is now about eighty years since this nation was engaged in a war in which the theater of military operations was within the home boundaries. The present war, big as it is, does not give much indication that the theater of operations will be laid in the continental limits of the United States. At least military plans have not envisioned such a probability at the present time. This fact has had a determining influence on our system of hospitalization of military casualties, most of which

TABLE 2.—*Spa Facilities According to Number of Patients Who Can Be Accommodated*

States	Number of Localities with Accommodations			
	Under 500	500-1,000	1,000-5,000	Over 5,000
Alabama	3	..	..	..
Arizona	2	..	..	..
Arkansas	..	..	..	1
California	21	1	1	..
Colorado	1	1	..	..
Florida	3	..	..	..
Georgia	2	..	..	..
Idaho	2	..	..	..
Illinois	1	..	..	..
Indiana	3	1	1	..
Iowa	1	..	..	..
Kentucky	1	..	..	..
Maine	..	1	..	..
Michigan	1	..	2	..
Minnesota	2	..	..	..
Mississippi	2	..	..	..
Missouri	1	..	1	..
Montana	4	..	..	..
Nevada	2	..	..	..
New Mexico	5	..	..	..
New York	3	..	2	1
North Carolina	3	..	..	..
Oklahoma	1	1	..	..
Oregon	3	..	..	..
Pennsylvania	1	1	..	..
South Dakota	1	..	..	..
Tennessee	3	..	..	..
Texas	1	1	1	..
Utah	1	..	..	..
Virginia	4	1	..	..
West Virginia	3	..	1	..
Wisconsin	..	1	..	..
Wyoming	2	..	..	..
Total	83	9	9	2

are expected to come from the theaters of operations in foreign lands. Experience shows that the Army must operate its own hospitals whether in the zone of the interior (home country) or in the theater of operations, which includes the zone of communications or supply lines and the combat zone itself. It is true that during the Spanish American War civilian hospitals were used for military patients, but that situation was brought about by the almost total absence of military hospitals of a permanent or fixed type. The use of civilian hospitals for military patients will come only when military operations are carried on in our own country or the capacity of our military hospitals is overtaxed. During the first world war, before American military hospitals were ready for casualties it became necessary to evacuate some of the American sick and wounded to French institutions, a procedure that created the utmost confusion and was discontinued as soon as possible.

Another general principle is that military hospitals must be general hospitals in the sense that they shall receive all types of patients, sick or wounded. The only exceptions in time of peace to this plan are the Fitzsimons General Hospital at Denver for the treatment of tuberculous military patients and the Army and Navy General Hospital at Hot Springs, Ark., which is operated by the Medical Department of the Army for the treatment of diseases for which the waters of that locality have an established reputation. Specialized hospitals have no place in the theater of operations except possibly some institutions for neuropsychiatric cases, the so-called shell shocked. Some of these were established fairly near the front for the purpose of keeping such patients away from the hospital atmosphere, which seems to grow on them and tends toward permanent demilitarization of this class of war casualties. Unless the principles of hospitalization in the present war are modified in a manner at variance with all past experiences and existing plans there will be no institutions for special treatment in the theater of operations, nor is the use of special hospitals contemplated anywhere except under military management. The purchase or lease by the Veterans Administration of existing spas or health resorts or the transfer of individual patients from Veterans Administration facilities has not been established as a policy at the present time. It is reasonable to expect that such a policy, if adopted, will operate after the war or during the later stages of a long war.

TABLE 3.—*States with Largest Accommodations*

	Number of Localities	1,000 or Over
1. Arkansas	1	20,412
2. New York	6	10,145
3. California	23	4,768
4. Michigan	3	2,755
5. Missouri	2	2,084
6. Texas	3	1,988
7. Indiana	5	1,955
8. West Virginia	4	1,815
9. Virginia	5	1,493
10. New Mexico	5	1,161
11. Oklahoma	2	1,030
Total	59	49,606

The present hospitalization program of the Army is similar to that which operated during the first world war. Near each concentration of troops there is provided a "station hospital" which might just as well be called a camp hospital for the troops in that immediate vicinity. The program calls for beds in station hospitals for 4 per cent of the military strength. They vary in capacity from 50 beds to several thousand and function under local commanders.

The general hospitals of the peacetime Army and Navy will continue to function as such on an expanded basis. Other general hospitals are being constructed throughout the country at strategic points. In the theaters of operations general hospitals will be provided by construction or otherwise to receive patients by transfer from station hospitals and through the established route in the evacuation of casualties via aid stations, clearing stations, surgical hospitals and evacuation hospitals. The allowance of general hospital beds in the zone of the interior will be approximately 1 per cent of the total strength of the Army. A much higher allowance of beds will be made in the theaters of operations. The requirement of fixed hospital beds in the American Expeditionary Forces in 1918 was 15 per cent of the forces engaged. General hospitals in the United States are under the supervision of the Surgeon General. They are general hospitals in every sense of the word, receiving and caring for the military sick and wounded of all kinds and conditions. Classification and consequent separation of patients is, of course, carried on in each large hospital, and when the situation calls for it several general hospitals may be grouped largely for administrative reasons, one hospital being designated for the sick, another for surgical cases or fractures and so on until there is developed a "hospital center" of more or less specialized units. Patients remain in these hospitals until returned to duty, discharged, transferred to the Army and Navy General Hospital or the Fitzsimons General Hospital or discharged and admitted to the facilities of the Veterans Administration.

For military purposes there are three ways by which health resorts, more particularly spas, can be of value:

1. By the acquisition by purchase or lease of these plants by the War or Navy Department for general hospital purposes after the necessary remodeling and additions.

2. By the transfer of individual military patients for special treatment under the direction of personnel now operating the spas.

3. By the operation of these institutions essentially as spas under military control. Their use as convalescent hospitals should be considered in this respect.

The acquisition by the Army and Navy of spas and health resorts and their development into military hospitals for the treatment of all classes of patients will be determined by their availability and the requirements of the service balanced against the advantages of new construction. Some of the larger spas and health resorts have been transferred to the jurisdiction of the War Department, reorganized on a general hospital basis and administered by the Medical Department of the Army. The large institutions at Battle Creek, Mich., Palm Springs, Calif., and White Sulphur Springs, W. Va., have been acquired by the Army Medical Department, and others are contemplated. It simply means that these institutions are being acquired in

TABLE 4.—*Spa Facilities According to Army Corps Areas (Army Service Commands)*

	Army Corps Area	Number of Localities	Accommodations
First.	Maine, New Hampshire, Vermont, Massachusetts, Rhode Island, Connecticut	1	640
Second.	New York, New Jersey, Delaware	6	10,145
Third.	Pennsylvania, Virginia, Maryland, District of Columbia	7	2,348
Fourth.	South Carolina, Tennessee, Louisiana, North Carolina, Alabama, Georgia, Mississippi, Florida	16	2,717
Fifth.	Ohio, West Virginia, Indiana, Kentucky	10	3,935
Sixth.	Michigan, Illinois, Wisconsin	5	3,425
Seventh.	North Dakota, South Dakota, Nebraska, Minnesota, Kansas, Iowa, Arkansas, Missouri, Wyoming	9	23,471
Eighth.	Colorado, Arizona, New Mexico, Oklahoma, Texas	14	5,128
Ninth.	Washington, Montana, Oregon, Nevada, Utah, California, Idaho	35	5,682
	Total	103	57,491

carrying out the hospitalization program of the Army. Their hydrotherapeutic facilities will become a valuable feature of physical therapy for medical and surgical cases, which is a fairly well developed service in the larger hospitals of the Army though not in a way comparable with that afforded by the facilities of the spas.

TABLE 5.—*Chronic Diseases Treated at Spas*

Heart and circulatory disorders	31 per cent
Rheumatic conditions	24 per cent
Gastrointestinal ailments	18 per cent
Nervous conditions, functional and organic	8 per cent
Metabolic diseases	4 per cent
Skin diseases (noninfectious)	2 per cent
Miscellaneous	3 per cent
No disease, chiefly general debility	10 per cent

The transfer of militarized patients to existing spas for special treatment is confronted by administrative difficulties. Few of these institutions are staffed, administratively organized and possessed of sufficient housing, hospital facilities and utilities to function in the general scheme of military hospitalization. Then there is the objection that military control of patients transferred to civilian institutions is lost, with inevitable confusion. It would seem to be better administration and would accomplish the purposes desired if, before discharge or general demobilization, patients for whom spa treatment is indicated were to be sent to those military hospitals which have been established on the sites of the larger health resorts.

The third proposition, the operation of spas under military control, meaning by this the supplementing of these institutions by military personnel and facilities to care for military patients, is to be thought of when the hydrotherapy and physical therapy facilities of the large spas already absorbed in the hospitalization program are exhausted. Their use as convalescent hospitals or camps as a start in a program of rehabilitation either by the military medical services or by the Veterans Administration is to be considered. After demobilization we may look for the closing of many general hospitals. At that time these reinforced spas, acting as convalescent hospitals, may be the answer to the problem of the follow-up treatment of the cardiovascular, digestive and rheumatic casualties of the war and the start of a program of health conservation and rehabilitation.

SPA THERAPY AND ITS USE IN THE TREATMENT OF CHRONIC WAR CASUALTIES

The therapeutic value of spa treatment needs no defense. It is an established feature of medical treatment based on ages of experience. As is well known, this treatment is featured according to the physical and chemical characteristics of the natural agents peculiar to the locality, varying as they do in thermal qualities and chemical content, such as the sulfur, brine and carbon dioxide waters. Closely associated with hydrotherapy is physical therapy, including its usual adjuncts of heat, light, electricity and the important matter of regulating diet, rest and exercise.

The diseases for the treatment of which these institutions have an established reputation are essentially chronic and may be listed as in table 5, based on the records of treatment of over 6,000 patients in one year at the Saratoga Spa.

Probably three fourths of those under treatment at spas are cardiovascular, rheumatic and gastrointestinal patients. These three groups accounted for a considerable proportion of admissions to sick report in the Army from April 1, 1917 to Dec. 31, 1919, as shown in table 6.

From the military standpoint it is important to note that these are type disabilities which are usually discharged from the military service and whose after-care becomes the responsibility of the U. S. Soldiers Home or the Veterans Administration. This is particularly true in time of war, when available beds must be used for war casualties who may become military assets instead of liabilities. Even so, we should give consideration to the prevention of permanent disability during the incipient stage of these ailments whether functional or organic, when treatment will be most beneficial. Discharged from military service, they face the realities of a rather complete readjustment with urges and necessities which place material interests above physical rehabilitation. These three groups accounted for more than 360,000 admissions in the Army during the first world war. If the mobilization of manpower is to be doubled during the present war there may be three quarters of a million in this reservoir of potential chronic cases.

The digestive diseases were the most important of these groups and accounted for about 9 per cent of admissions. It is estimated that they will furnish 10 per cent of admissions during the present war and on this estimate specialists in gastroenterology have been provided for in our general and large station hospitals. In reviewing the records of the first world war relating to digestive diseases, Kantor[3] attempts to estimate the permanent disability from this cause in soldiers based on Veterans Administration records and shows that whereas these diseases occurred among soldiers of the first world war to the extent of 9.2 per cent and among the disabled veterans to the extent of 3.5 to 4 per cent as late as 1940 "these figures might represent the residue of chronic or permanent disability resulting from the original acute wartime incidence of gastrointestinal disease." Conceding a large margin of error in this calculation, it must be evident that these diseases swell the steadily growing total of chronic ailments to which the attention of medicine is being directed more and more year by year. Cardiovascular conditions are more easily detected at the recruit examinations than digestive diseases. The functional nature and origin of many of these suggest the benefits to be expected of spa treatment—physical medical treatment in general. I have in mind neurocirculatory asthenia, the D. A. H. (disordered action of the heart) cases early recognized by the British in the previous war. Appropriate management would rescue some of these men for military service, from invalidism and its huge pension rolls. It is

TABLE 6.—*Patients with Three Diseases*

Digestive diseases, excluding appendicitis and diseases of the mouth	264,611
Cardiovascular diseases, excluding hemorrhoids, varicocele and lymphatic diseases	54,481
Rheumatic diseases, not so classified in reports but including 32,204 arthritis and 11,328 muscular rheumatism	43,532

3. Kantor, John L.: Digestive Disease and Military Service, J. A. M. A. **120**: 254 (Sept. 26) 1942.

known that the British and Germans are making use of their spas for military personnel as the French did some time ago.

The ill defined group called rheumatic, accounting for so much disability that statistical analysis is unnecessary and from which military service affords no immunity, rounds out a list of ailments for which spas were created. The usual case finding crusades are not necessary as in certain other diseases; they are "gathered," as it were, rather than discovered and in numbers which justify spa treatment in a way consistent with the general principle of military hospitalization. The best method would seem to be the employment of the existing facilities of the spas taken over by the federal medical services for general hospitals and by militarizing and supplementing such other health resorts as may be needed for use as convalescent hospitals and by a working arrangement between certain health resorts of the spa type with the Veterans Administration for the care of war veterans after discharge.

THE USE OF SPAS AND HEALTH RESORTS FOR THE CIVILIAN POPULATION IN THE PRESENT EMERGENCY

The use of spas and health resorts for the civilian population in the present emergency is a subject entirely distinct from their use for purely military purposes. As specialized institutions they offer facilities for the treatment of many conditions arising out of service in war industry and, on account of the scarcity of hospital facilities in over-crowded production areas, these institutions might well be developed into a valuable asset in the field of industrial medicine and hygiene. With the increasing scarcity of physicians for civilian service and of hospital facilities, the value of the spa is enhanced because of its ability to give appropriate treatment to many without additional facilities.

Many of the conditions so prevalent among workers, especially in heavy industries, are greatly benefited by spa treatment, and the same is true of those which partially immobilize at least periodically a large part of our population however employed. With the great advances made by preventive medicine, particularly in overcoming the infectious diseases, life expectancy has been prolonged and a greater proportion of the population is year by year arriving at the higher age brackets. The infections are gradually giving way to structural or degenerative changes and consequent chronic ailments. As a result, we have with us a steadily increasing proportion of cardiovascular cases and many more in that vast field referred to as rheumatic. It is the chronic degenerative diseases which are plaguing the later years of our lives and which present the most absorbing problem of the medical profession. The treatment of these cases is largely a feature of physical medicine, and in this field the therapy of the spa is predominant in the prevention and control of these conditions which, if unchecked, lead on to invalidism.

SUMMARY

1. The importance of health resorts in medical preparedness must be considered in connection with the military situation, the hospitalization plan and the policy governing the disposition of noneffectives during and after active military operations.

2. The so-called health resorts without substantial natural therapeutic agents and facilities are of value in medical preparedness only as their physical plants or utilities are available when and where needed to supplement the military housing program. Some of these have been useful already as station or local hospitals. Others will prove valuable as military expansion proceeds.

3. The chief duty of the military medical service is the conservation of effective manpower for the purpose immediately in view. Military operations are complex under all circumstances; the medical service itself, in arranging its hospitalization, must adjust itself to the organization, distribution and operation of the troops it serves. Experience has shown that the establishment of special hospitals is unsound, as is the retention of noneffectives in the military service. Hence in the early stages of any war the development of special hospitals will not be in order.

4. The value of many of the existing spas for military medical purposes is decidely influenced by their lack of housing facilities for patients, permanent professional staffs, administrative machinery and other facilities for handling groups of men commensurate with their special treatment facilities.

5. The most extensive employment of spas in medical preparedness will likely be through their acquisition by the Medical Department of the Army or Navy for use as general hospitals with such additions as may be necessary. Their therapeutic appurtenances will be valuable in supplementing the physical therapy department, which has become a recognized and necessary service at every large military hospital. Added to this will be, of course, the special program utilizing the natural therapeutic agents of the spas. Through the growth of the military establishment commensurate with the seriousness of present world conditions, the Medical Department of the Army may well find it expedient to designate general hospitals with spa facilities for treatment of certain chronic diseases before discharge or demobilization, as was done to a limited extent during and after the first world war when the empyemas, fractures, osteomyelitis cases and amputations were concentrated in designated general hospitals.

6. The distribution among spas of individual convalescent patients for special treatment of conditions, many of which are chronic and disabling for the military service, is objectionable for administrative reasons, especially as it severs their contact with the military establishment.

7. Consideration should also be given to some of the strategically located health resorts for use as convalescent hospitals or camps after supplementing them with military personnel and utilities.

8. The disease groups for which spa treatment is especially efficacious, digestive, cardiovascular and rheumatic, comprise a large percentage of admissions to sick report in the Army—more than 360,000 from April 1, 1917 to Dec. 31, 1919, many of which became chronic with resulting invalidism.

9. Spas have a decided value in supplementing the medical service of the civilian population, especially the added requirement incident to war industry. Many of the workers in this group of the population are beyond the military age limit and therefore present those chronic ailments which are becoming more prevalent in the general population year to year and which should be recognized as a real public health problem.

Council on Physical Therapy

THE COUNCIL ON PHYSICAL THERAPY HAS AUTHORIZED PUBLICATION OF THE FOLLOWING REPORT.

HOWARD A. CARTER, Secretary.

SONOTONE AUDICLES #530, #531, #533 ACCEPTABLE

Manufacturer: Sonotone Corporation, Elmsford, N. Y.

The three models of the Sonotone Audicles were investigated by the Council and are treated individually in the following report:

SONOTONE AUDICLE #530

The Sonotone Audicle #530 consists of a microphone and vacuum tube amplifer combined in a molded case 3¼ inches by 1¼ inches by ¾ inch, weighing 3.46 ounces, and air receiver ¼ inch thick by 1 inch diameter. Three B battery units were submitted with the instrument.

Current Data.—Battery voltages and current drains with the hearing aids turned full on were measured as follows:

A Battery	Voltage	Current
x-803	1.5 volts	85-88 milliamperes
x-800	1.5 volts	86 milliamperes
B Battery	**Voltage**	**Current**
918	18 volts	0.48 milliampere
930	30 volts	0.84-0.96 milliampere
945	45 volts	1.4 -1.70 milliamperes

Acoustical Gain.—The instrument has a single switch for on-and-off volume control. Set at full volume, the acoustical gains shown were as follows:

B Voltage	128	256	512-2,048	3,072	4,096
18 volts	Nil	Nil	12-30 db.	21 db.	8 db.
30 volts	Nil	Nil	14-39 db.	23 db.	10 db.
45 volts	Nil	Nil	14-50 db.	30 db.	12 db.

The foregoing measurements are for pure tones at normal ear threshold levels. At 50 decibels above threshold the gain at 512 cycles per second is about 10 decibels higher, but the output shows harmonic distortion at this frequency. Whispered voice was heard and understood at a distance of 5 feet by a hard of hearing subject, with an average hearing loss of 45 decibels in the speech range.

Articulation.—Articulation tests with hard of hearing subjects, with the volume set for comfortable loudness, showed satisfactory performance.

The instrument is well made throughout.

SONOTONE AUDICLE #531

The Sonotone Audicle #531 consists of a microphone and amplifier unit, combined in a molded case 4⅛ by 2⅛ by ⅞ inches, weight 4.8 ounces, a magnetic receiver 5/16 inch thick by ¾ inch diameter, weight without molded earpiece 9.32 ounces, and a bone receiver 1 3/16 by 11/16 by 7/16 inches, weight 0.56 ounces. Three B battery units 18 volt, 30 volt and 45 volt were furnished, each complete with a 1.5 volt A battery as described in the report on the Sonotone Audicle #530.

Current Data.—Current drains on the 1.5 volt A battery was approximately 85 milliamperes for each of the three B battery units. The B battery currents shown are:

18 volts	0.80	milliampere
30 volts	1.0 -1.2	milliamperes
45 volts	1.6 -2.0	milliamperes

Acoustical Gain.—In addition to the volume control there is a tone control consisting of a screw with four tone settings. The effect of shifting the tone control from 1 to 4 was to increase the amplification for the frequencies up to 2,048 cycles and to decrease it over the range from 2,048 to 4,096. The following are the approximate acoustical gains at full volume for different instrument settings and B battery voltages:

B Battery					
Voltages	Tone Control	128	256	512-2,048	4,096
18	#1	Nil	Nil	18-39 db.	4.2 db.
18	#4	Nil	12 db.	25-52 db.	Nil
45	#1	Nil	10 db.	21-47 db.	17.5 db.
45	#4	Nil	20 db.	33-53 db.	8.0 db.

Articulation.—Tests using syllable and sentences with a hard of hearing subject showed satisfactory performance. Whispered voice was heard and understood at 8 feet in a quiet room by a hard of hearing subject with an average hearing loss of 45 decibels.

The instrument is well made.

SONOTONE AUDICLE #533

The Sonotone Audicle #533 is similar in external respects to the Sonotone #531. The combined microphone and amplifier unit has three controls—a separate on and off switch, a volume control and a "tone discriminator." It also has connection for a magnetic receiver and a separate connection for a crystal receiver. The microphone and amplifier unit are combined in a molded case 5 by 2⅜ by ⅞ inches, weight 6.0 ounces. The magnetic receiver and the bone conduction receiver were the same as for Sonotone #531. Only the magnetic receiver was supplied with the instrument.

Current Data.—Battery units were supplied showing voltages and current drains at full volume as follows:

A Battery	Voltage	Current
x-803	1.5	75 milliamperes
x-800	1.5	75 milliamperes
B Battery		
930	30	85 milliamperes
945	45	1.2 milliamperes

Acoustical Gain.—Measurements of acoustical gain, with input at normal ear threshold, were made using the 30 volt B battery at full volume and at different tone settings, with the following results:

Tone Setting	128	256	512-2,048 Min.-Max.	3,072	4,096
1	Nil	Nil	5 db.-42 db.	28 db.	11 db.
3	Nil	Nil	24 db.-45 db.	30 db.	12 db.
6	Nil	5 db.	31 db.-45 db.	25 db.	9 db.

The effect of the "tone discriminator" is to vary the low frequency response relative to the response at high frequencies. The internal noise is not excessive. It was found that, with the 45 volt battery and with both volume and tone control set at maximum, there was a squeal due to feedback. This was eliminated, however, when either control was set slightly below maximum.

Articulation Tests.—The usual tests with hard of hearing subjects were made and showed satisfactory performance.

The instrument is well made throughout.

The Council voted to accept the Sonotone Audicles #530, #531, #533 for inclusion in its list of accepted devices.

Council on Pharmacy and Chemistry

NEW AND NONOFFICIAL REMEDIES

THE FOLLOWING ADDITIONAL ARTICLES HAVE BEEN ACCEPTED AS CONFORMING TO THE RULES OF THE COUNCIL ON PHARMACY AND CHEMISTRY OF THE AMERICAN MEDICAL ASSOCIATION FOR ADMISSION TO NEW AND NONOFFICIAL REMEDIES. A COPY OF THE RULES ON WHICH THE COUNCIL BASES ITS ACTION WILL BE SENT ON APPLICATION.

AUSTIN E. SMITH, M.D., Secretary.

EPHEDRINE SULFATE (See New and Nonofficial Remedies, 1943, p. 256).

The following dosage forms have been accepted:

AMERICAN PHARMACEUTICAL CO., INC., NEW YORK

Solution Ephedrine Sulfate, 3 per Cent: 1 fluidounce bottle. Preserved with 0.5 per cent chlorobutanol.

Capsules Ephedrine Sulfate: 25 mg. and 50 mg.

EPHEDRINE HYDROCHLORIDE (See New and Nonofficial Remedies, 1943, p. 255).

The following dosage forms have been accepted:

AMERICAN PHARMACEUTICAL CO., INC., NEW YORK

Solution Ephedrine Hydrochloride, 3 per Cent: 1 fluidounce bottle. Preserved with 0.5 per cent chlorobutanol.

Capsules Ephedrine Hydrochloride: 25 mg. and 50 mg.

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SATURDAY, NOVEMBER 27, 1943

THE INFLUENCE OF THE ENDOCRINE GLANDS ON GROWTH AND AGING OF THE SKELETON

Since disturbances of body growth are not infrequently associated with endocrine disorders, attempts have been made to establish the role of the ductless glands in the maintenance of normal and in the initiation of pathologic skeletal development. The tendency is to consider the anterior hypophysis as the master gland controlling skeletal growth by a single specific growth hormone. Other endocrines are thought by many to affect growth only by acting first on the hypophysis.[1] More recent anthropologic and comparative anatomic observations, however, indicate that skeletal development is primarily genetically determined, although it may be modified by the secretions of ductless glands.[2] Moreover, hormones may influence not only skeletal growth but also skeletal aging, and often the aging effect outbalances the growth promoting.[3]

Histologically there are three phases of skeletal growth and aging, the first characterized by growth of cartilage, the second showing increasing regression of cartilage and maturation of bone, the third exhibiting a predominance of resorption of cartilage and bone. The duration and degree of these phases vary in different species and strains. In the joints of aging mice spontaneous degenerative changes occur, which are more severe and more frequent in rapidly aging strains.[4] Administration or withdrawal of hormones may affect one or all three developmental phases. In growing animals, anterior hypophysial hormone, prolactin, thyroid hormone, potassium iodide and, in the hypogenital male, also testosterone may temporarily intensify body growth.[5] Gigantism, however, does not result, since growth ceases prematurely, while the onset and progress of the subsequent phases of aging are accelerated. Under certain conditions the age changes may be so hastened that they outbalance the growth stimulation, and stunting results. Estrogens and androgens inhibit growth and intensify aging of the epiphysial cartilage and may thus cause dwarfing. The effects of estrogen are, however, more complex, since it inhibits the resorption of bone and, in some species and strains, increases endosteal bone formation.[6] Skeletal aging is delayed subsequent to thyroidectomy, to castration and to administration of progesterone, but this retardation is compensated at later stages by a more rapid progress of the age changes, and there ensues no skeletal overgrowth.

In animals that have definitely ceased to grow, growth promoting substances do not revive the proliferation of the inactive epiphysial cartilage, but they may accelerate and intensify the processes of skeletal aging; thus, anterior hypophysial hormone increases the incidence and severity and hastens the onset of the articular age changes, and estrogen may call forth osteoporotic lesions.[7] Besides the age of the animal, its sex, the dose of the hormone, the duration of the treatment and seasonal influences modify the hormonal effects on the skeleton.[8] Hormones of different nature produce similar histologic changes in the skeletal tissues.

The specificity of hormonal effects on the skeleton seems to be restricted, and quantitative rather than absolute. Moreover, it seems doubtful whether the term "growth hormone" should be applied to a substance that promotes not only growth but also the opposite, namely the regressive changes of aging. Since growth is the result of a variety of complex biochemical processes, it seems improbable that a single growth hormone could promote all of them and even in a limited way be specific in nature. Anterior hypophysial hormone, however, increases the retention of nitrogen and the storage of water and fat in the tissues.[9] Therefore the anterior hypophysis and also other endocrines affect growth by participating in the metabolism of the products needed by the organism for its growth as determined and limited by the genetic constitution of the individual. Presumably a number of hormones cooperate also in the metabolic activities that bring about skeletal aging.

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9. Long, C. N. H.: Metabolic Functions of Endocrine Glands, Ann. Rev. Physiol. **4**: 465, 1942.

RECENT DATA ON TRICHINAE IN NECROPSY MATERIAL

During the past several years a survey of trichina infection in necropsy material obtained from hospitals throughout the United States has been conducted in the laboratories of the United States Public Health Service. A recently published summary [1] of the general results provides a wealth of data on some aspects of the trichinosis problem in this country. Examination of the muscle of diaphragms with the aid of the dissecting microscope or with the help of the Baermann apparatus after enzymatic digestion revealed that 1 in 6 of the more than 5,000 specimens studied was positive for Trichinella spiralis. The sampling of the necropsy material employed in this investigation was such that the results provide a reasonably accurate index for the entire country. The residences of persons represented in the survey included forty-one states and the District of Columbia, both urban and rural. Necropsy material from people in states in which clinical trichinosis had not been reported at the time this survey was inaugurated, material from persons who died suddenly from natural or traumatic causes and material selected at random from hospitals selected at random were all included. There were no statistically significant differences in the percentage of positives in the various states or in the urban and rural groups. With the view of demonstrating the degree of protection afforded by the Mosaic code, samples from 200 orthodox and unorthodox Jews were included in the survey. Of this number only 1 was positive. All the material in this short series was from New York City; possibly a higher percentage of positives might have been obtained if necropsy material from Jewish people throughout the country had been examined. Nevertheless the present data clearly demonstrate the protection afforded by adherence to the Mosaic code.

With regard to the degree of infection, approximately 86 per cent of the total number of infected specimens contained less than 11 larvae per gram. Four and five-tenths per cent of the positive cases showed infections of more than 50 per gram, a number which Wright and his associates [1] believe capable of causing pronounced clinical symptoms. An appraisal of a number of cases in which both live and dead larvae were encountered indicated beyond reasonable doubt that in some instances a superimposed infection had occurred. This corroborates the similar results of others [2] and emphasizes that the observations on the resistance to reinfection with trichina exhibited by rats [3] does not warrant belief that the same phenomenon applies to man.

Wright and his collaborators decry any attempts to minimize the significance of trichinosis as a public health problem on the basis of statements that a clinical history of the disease may not have been reported in cases in which the parasite was found at necropsy. Such assertions do not refute the possibility that heavily infected people may have had clinical trichinosis during their lifetime without the disease having been recognized. Indeed, there is little doubt, according to Wright and his co-workers, that not all cases of trichinosis are diagnosed either clinically or anatomically. In any event the present survey, like previous less extensive studies, indicates that infection with trichina is widespread in this country. This is a problem which is of interest to all who are concerned with public health. Regrettable shortcomings in our control of trichinosis in the past have already been pointed out.[4]

1. Wright, W. H.; Kerr, K. B., and Jacobs, Leon: Studies on Trichinosis: XV. Summary of the Findings of Trichinella Spiralis in a Random Sampling and Other Samplings of the Population of the United States, Pub. Health Rep. **58**: 1293 (Aug. 27) 1943.
2. Most, Harry, and Helpern, Milton: The Incidence of Trichinosis in New York City, Am. J. M. Sc. **202**: 251 (Aug.) 1941.
3. McCoy, O. R.: Immunity of Rats to Reinfection with Trichinella Spiralis, Am. J. Hyg. **14**: 484 (Sept.) 1931.

Current Comment

HOPE (FALSE) FOR THE VICTIMS OF ARTHRITIS

Under Correspondence in this issue of THE JOURNAL appears a letter from Dr. Ralph H. Boots, New York, relative to an article in the *Reader's Digest* for November titled "Hope for the Victims of Arthritis." In 1937 the Council on Pharmacy and Chemistry of the American Medical Association indicated that a product called Ertron, which is a capsule containing some 50,000 U. S. P. units of vitamin D, was not acceptable for New and Nonofficial Remedies. The flamboyant advertising then used for the product was condemned. The Council also said that there was no proof that such large doses of vitamin D are not toxic and it concluded "Critical examination of the reports on the value of vitamin D in the treatment of chronic arthritis reveals little to warrant the belief that the beneficial effects claimed are specific." In the years that have passed, other discussions of the use of massive doses of vitamin D in the treatment of arthritis have been published, including a symposium on the subject before the American Rheumatism Association in June 1942 and a paper by Dr. R. H. Freyberg of the University of Michigan in THE JOURNAL.[1] Dr. Freyberg found the results of the use of such preparations unimpressive. The consensus of the symposium before the American Rheumatism Association was likewise far more negative than favorable to the use of this preparation. In New and Nonofficial Remedies, 1943, the Council summarized the evidence available to the date of publication in the following sentence: "Clinical evidence does not warrant the claim that massive doses of vitamin D are of

4. Garbage Disposal and Trichinosis, editorial, J. A. M. A. **115**: 938 (Sept. 14) 1940.
1. Freyberg, R. H.: Treatment of Arthritis with Vitamin and Endocrine Preparations: Emphasis of Their Limited Value, J. A. M. A. **119**: 1165 (Aug. 8) 1942.

benefit in chronic arthritis. . . ." Nevertheless de Kruif in an article in the *Reader's Digest* for November conveys to its readers his extraordinary enthusiasm regarding this technic. Apparently the article stimulated hundreds of persons with arthritis to approach their physicians and to request a change from the methods of treatment which were being followed to the use of such preparations. Many of these physicians report that they have received from one hundred to three hundred requests either directly or in writing. Those who attempt education of the public in matters of health and disease have a serious responsibility; they do incalculable harm when they mislead the public.

PENICILLIUM INOCULATED SURGICAL DRESSINGS

Since purified penicillin is not generally available for civilian use, attempts have been made to find a substitute. One suggestion is the use of moist pencillium inoculated surgical dressings, which have been tested clinically by Robinson and Wallace [1] of the Allegheny General Hospital. In the preparation of such dressings, eight layers of gauze were placed in a Petri dish and saturated with a medium containing 1 per cent yeast extract, 2 per cent dextrose, 2 per cent corn starch and 2 per cent glycerin. The dish was then autoclaved, inoculated with penicillium and incubated at room temperature. Two days later 1 cc. of sterile human plasma was allowed to flush underneath the dressing to simulate its application to an open wound. At intervals the Petri dish was tipped so that a small amount of fluid would drain away. Titration of this fluid showed a rapid production of penicillin in the gauze culture. The maximum titer was reached by the end of six days, at which time the drainage fluid inhibited growth of test strains of Staphylococcus aureus in dilutions as high as 1:200. The titer decreased rapidly after the seventh day. Clinical tests of such penicillium gauze dressings were made on a number of patients. A typical case was one of acute osteomyelitis and periostosis of the right humerus. A previous wide incision had been made over the site of the infection and sulfonamides prescribed without relief. A moist penicillium gauze dressing was placed over the wound, with prompt relief of pain. In ten days the patient was discharged clinically well. Another patient was treated for a large staphylococcic furuncle on the back of the neck and a third for multiple soft tissue Staphylococcus aureus abscesses over the lower back and sacral region with equally favorable results. From these and other clinical data the Pittsburgh surgeons conclude that penicillium inoculated surgical dressings are of promise in the treatment of acute and chronic pyogenic surface infections. Their use is recommended merely as an emergency measure until adequate supplies of purified penicillin are generally available. Whether or not there are toxic or allergic reactions that might limit the use of such dressings has not yet been reported.

1. Robinson, G. H., and Wallace, J. E.: Science **98**: 329 (Oct. 8) 1943.

MEDICAL SERVICE IN SOUTH AFRICA

The reorganization of medical service has been discussed in South Africa for several years. During the last three years this discussion has increased in intensity. Several reports have been made by the Planning Committee of the South African Medical Association. The publication of the first report,[1] two years ago, was followed by an elaborate questionnaire to all the members of the association requesting expression of opinion on almost every phase of the proposed plan. The planning committee then studied these replies and prepared a report and plan in accordance with the majority of opinions in the questionnaire.[2] As a preliminary statement of principles the committee pointed out that more "doctoring . . . is in itself no solution of the health problem of the country. . . . Freedom from want and poverty will do more to build up a healthy community than any amount of curative medical services." The committee found that "there was an overwhelming majority against a scheme operated as part of the civil service and run on civil service or army lines." Instead of a civil service system the committee proposed "a health service under the minister of health, with an elected council, including professional representatives, having executive as well as advisory powers." The whole plan depends on a "parallelism" with administrative matters under the control of government authority and all medical matters under medical control and supervision. It is proposed that the National Health Advisory Council, which is to have considerable executive power, should have 28 members, 9 to represent governmental departments, 3 the public and 16 the professional medical associations, including physicians, dentists, nurses, pharmacists and medical technicians. This type of organization is to be extended into regional divisions that have about 500,000 population and at least one "grade A" general hospital of about 1,000 beds and such other specialist and auxiliary hospitals as might be found necessary. Certain health and protective service should be conducted in health centers. "So far as curative services are concerned, the bulk of the work should, in our opinion, still continue to be carried out by the general practitioner."

VOLUNTEERS FOR MALARIA TEST AWARDED LEGION OF MERIT

Fifty enlisted men volunteered to expose themselves to malarial infection for a period of six weeks in the jungles of New Guinea. This was to demonstrate the danger of malaria for those not taking preventive measures. A similar group was given atabrine as a malarial suppressive, while a third group used a drug the efficacy of which has not yet been fully disclosed. As a result of this action "beyond the call of duty" the men have been awarded the Legion of Merit. The action of these men is in the best traditions of the Army as exemplified by a similar group of volunteers in the famous experiments under Major Walter Reed, which contributed so much to the conquest of yellow fever.

1. Memorandum from the Planning Committee, South African M. J. **16**: 261 (July 25) 1942.
2. The Future of Medicine, South African M. J. **17**: 199 (July 10) 1943.

MEDICINE AND THE WAR

In this section of The Journal each week will appear official notices by the Committee on War Participation of the American Medical Association, announcements by the Surgeons General of the Army, Navy and Public Health Service, and other governmental agencies dealing with medicine and the war, and such other information and announcements as will be useful to the medical profession.

ARMY

MANAGEMENT OF POLIOMYELITIS

The War Department, Washington, D. C., recently released Circular Letter No. 175, regarding the management of poliomyelitis, which is as follows:

1. GENERAL

1. a. The sudden onset and obscure source of poliomyelitis the uncertainty of effective preventive measures, the lack of specific therapeutic agents and the frequently distressing residuals or occasional deaths among those attacked have established a special dread of the disease among the general public and the medical profession alike. As a medicomilitary problem poliomyelitis has not been proportional to the public interest in and concern for it. However, although it is a relatively rare disease in the Army, it presents certain special problems of management.

b. The principles of therapy which follow were formulated after conference with a group of recognized authorities on the different aspects of poliomyelitis. These principles are stated here in the belief that they include the most acceptable of the therapeutic procedures currently advocated. It should be emphasized that the information is intended to serve only as a guide and is not an effort to standardize the treatment of poliomyelitis in the Army. Perhaps no other disease calls for more individualization of therapy.

2. TREATMENT

2. With respect to therapy, poliomyelitis may be said to present four phases: acute, subacute, convalescent and chronic.

a. *Acute Phase.*—(1) Definition: The acute phase includes the onset, which is characterized by malaise, nausea, vomiting, diarrhea and fever either singly or in combination. There are usually pain and tenderness and often stiffness in the muscles of the extremities or back. The degree of general systemic illness varies greatly; it is often severe. Paralysis of varying degree and extent characteristically appears in the second twenty-four hours of this phase, although it may not occur for several days. The disease may even terminate abruptly without the appearance of paralysis. The acute phase of poliomyelitis usually runs a self-limited course of three to seven days.

(2) Management: (a) Transportation. As a rule patients should be treated during this phase in the hospital where they are first seen. They are either too sick to move or only moderately ill, in which case they will survive the acute phase without special facilities. If special equipment is necessary, it should be transported to the patient by the most expeditious means available.

(b) Isolation Precautions. Standard measures for the management of communicable disease in hospitals will be applied as prescribed in Army Regulations (AR 40-210, paragraph 34*a* and section II, IV and V). These include isolation by individuals or groups, control of visitors, protection of attendants, destruction or disinfection of secretions and discharges, adequate cleansing and disinfection of contaminated articles, and other medical aseptic technic appropriate for hospital management of communicable respiratory and intestinal diseases.

(c) General Measures. Rest, support and symptomatic relief are the important aims of therapy during this period. Absolute bed rest is essential. A nutritious, easily digestible diet, adequate in or supplemented by vitamins, should be maintained when it is tolerated; and the adequacy of fluid intake should be assured. Careful attention to the functions of the kidneys and bowels is especially important for these patients, since paralysis of the bladder may demand catheterization, and constipation may need occasional relief with enemas or mild laxatives. Sedation is usually effective in allaying the anxiety, apprehension, irritability and nervousness frequently encountered during this period. Sympathetic and tactful attention to the psychologic aspect of the patient's illness is of utmost therapeutic importance, both during the period when he is acutely ill and the long weeks or months before he reaches his maximum improvement. Medical officers, nurses and their assistants must constantly bear this feature of the illness in mind. Part or all of these general measures will be found extremely important through all the phases of poliomyelitis.

(d) Local Measures. Careful nursing attention must be provided to maintain the affected parts of the body in the most desirable physiologic position, with the least discomfort to the patient. Application of heat to the involved muscle groups is desirable for the relief of pain and tenderness. Heat may be applied by a variety of means, but hot packs are probably of most value. In the absence of pain and tenderness the patient should be allowed to rest without the disturbance of physical therapy procedures. There does not appear to be well established evidence that any special form of local therapy has any controlling or curative effect on the ultimate extent or outcome of the paralysis.

(e) Special Measures. 1. Use of the mechanical respirator in the treatment of poliomyelitis has been given much publicity. Spectacular results in individual cases have led to public and professional acclaim, which in a sense obscures both the limits of its field of usefulness and the contraindications in the presence of which its use may actually be harmful. The respirator provides rest for paralyzed or weakened muscles of respiration. It is useful generally only when there is paralysis of the intercostal muscles or diaphragm. For this purpose it is of great importance to recognize early weakness of the respiratory muscles and to protect these muscles at the earliest detectable indication of weakness by placing the patient in the respirator. Respiratory difficulty due to disturbance of the nervous center (bulbar type) is rarely benefited by the respirator. Mechanical respirators have been strategically located in hospitals in each service command and in overseas theaters so that it is possible to transport them without delay to other hospitals on emergency request. Their location is always known to the service command or theater surgeon, and on request he can arrange for prompt delivery of the equipment to any installation within his command.

2. In the treatment of this phase, in addition to the treatment of bulbar paralysis, nursing care is especially important. It is helpful to place the patient in a prone position with the foot of the bed elevated to 30 or 40 degrees, thus facilitating the drain-

age of mucus, saliva and vomitus from the throat. Suction equipment should always be at the bedside for clearing away any material which may obstruct the breathing passages. This may be a life saving procedure. As long as there is difficulty in swallowing, parenteral fluids may be necessary. It is unwise to give anything by mouth to a patient with pharyngeal paralysis. It should be pointed out that the use of the respirator in this type of case is rarely of value; the respirator is of aid only when there is paralysis of the diaphragm or intercostal muscles or, in rare instances, when there is hypofunction, not dysfunction, of the respiratory center. It may actually be harmful when the respiratory difficulty is associated with or caused by accumulation of obstructing material in the pharynx.

3. The preponderance of available evidence does not indicate that convalescent poliomyelitis serum is of therapeutic benefit. Its administration to Army personnel is therefore not recommended.

4. Therapeutic efficacy has been claimed for neostigmine. Its use, however, remains in an early experimental stage and its administration to Army personnel is not recommended.

b. *Subacute Phase.*—(1) Definition: The subacute phase begins when the acute illness has subsided, fever, headache and gastrointestinal symptoms have disappeared and the general malaise has lessened.

(2) Management: Treatment of this phase, in addition to the general and special measures mentioned in the acute phase, is directed to protection of the affected muscles and the institution of limited movements. In this stage contractures may develop, and contractures produce deformities. Appropriate orthopedic and/or physical therapy procedures should now be instituted to prevent deformities and to maintain physiologic position. During this period, when muscles are tender and painful, passive movements within the limit of tolerance, as manifested by increased pain, should be instituted by qualified physical therapy aides under the careful direction of medical officers. The physical therapy measures needed include only those conventional methods which have received general acceptance and are in common use. Active motion, when found to cause increased pain and tenderness, should be discouraged. All local therapy should be limited to the involved parts as manifested by pain, tenderness, hypertonicity or paralysis.

c. *Convalescent Phase.*—(1) Definition: With the disappearance of pain and tenderness, poliomyelitis passes into the convalescent phase, which may last for three to twelve months or occasionally longer. It is during this period that maximal recovery of muscle power occurs.

(2) Management: (a) Both orthopedic and physical therapy measures should be adopted which will enhance this recovery in every way possible. These measures will include mechanical support of the affected parts and physical therapy treatment such as massage, radiant or other heat and exercise of passive, assistive, active or reeducational character, depending on the degree of weakness and extent of paralysis.

(b) Transfer to the general hospital. Treatment in this phase is best carried out in a general hospital. It is therefore desirable that patients be transferred to general hospitals as soon as the convalescent phase is reached. This is ordinarily within eight weeks after onset. In individual cases, as provided in S. G. O. Circular Letter No. 73, 17 March 1943, consideration may be given to transfer to the Army and Navy General Hospital, Hot Springs, Ark., where facilities are available for special therapeutic measures.

d. *Chronic Phase.*—(1) Definition: When there is no longer improvement in involved muscle groups and residual deficiencies have become stationary, the chronic phase begins.

(2) Management: Further corrective measures will ordinarily become the function of orthopedic surgeons, who will be found in the general hospitals to which patients are transferred in the convalescent phase.

For the Surgeon General:

ROBERT J. CARPENTER,
Lieutenant Colonel, Medical Corps,
Executive Officer.

LIEUT. COL. ROBERT W. DuPRIEST AWARDED LEGION OF MERIT

The War Department announced on November 12 an award of the Legion of Merit to Lieut. Col. Robert W. DuPriest for "exceptionally meritorious conduct in the performance of outstanding service during and following the Japanese attack on Oahu, Dec. 7, 1941. Lieutenant Colonel DuPriest, then chief of the Section of General Surgery, Tripler General Hospital, observing the great influx of seriously injured battle casualties, immediately established an effective system for routing essential supplies to the operating suites, thus greatly expediting the surgical care of the wounded. During the long hours which followed the initial influx of casualties, Lieutenant Colonel DuPriest contributed to the saving of many lives by his wise selection of cases and by his skill as a surgeon." Dr. DuPriest graduated from the University of Minnesota Medical School in 1935 and from the U. S. Army Medical School in 1935.

TOTAL PNEUMONECTOMY PERFORMED NEAR BATTLE FRONT

According to a recent announcement from the allied headquarters surgeons' office in Algiers, one of the most delicate operations ever done under field conditions was performed by a 5th army surgeon recently under a tented operating room and with a battle raging only a few miles away. The patient, a German soldier, was so badly wounded by shell fragments in the chest that one lung had to be taken out to save his life. Major Paul C. Samson, former assistant clinical professor of surgery at Stanford University School of Medicine, San Francisco, performed the operation. Dr. Samson graduated from the University of Michigan Medical School, Ann Arbor, in 1928 and entered the service May 10, 1941.

NEW ASSISTANT COMMANDANT AT CARLISLE BARRACKS

Col. Howard T. Wickert, who recently returned from an inspection tour of medical installations and activities in the United Kingdom, North Africa and Sicily, has been named assistant commandant of the Medical Field Service School at Carlisle Barracks, Pennsylvania. He succeeds Col. Guy B. Denit, who has been acting assistant commandant following the recent retirement of Col. Albert S. Dabney, now assistant dean of the University of Pittsburgh School of Medicine. Dr. Wickert graduated at the Jefferson Medical College of Philadelphia in 1914. He was commissioned in the reserve in May 1917 as a first lieutenant and was called to active duty the following June. He served with the British and American expeditionary forces, subsequently serving in various camps, stations and hospitals in the United States and completing additional studies of army training. On graduation from the Army War College in June 1928 Colonel Wickert was assigned to the Surgeon General's Office in Washington, where he was director of the plans, division and operations service.

PSYCHIATRISTS ASSIGNED TO UNITS

The War Department, Washington, D. C., appreciating the advance made in recognizing and treating symptoms calling for specialized handling by psychiatrists of personnel in the armed forces, is revising tables of organization to include a neuropsychiatrist, to be assigned automatically to every division. He will be a member of the division surgeon's office and will advise the division surgeon along the line of his specialty. He is to have the rank of captain or major. During the training period of troops, the division psychiatrist will be expected to detect, treat and eliminate actual and potential neuropsychiatric cases. In addition, he will instruct all officers of the division in the recognition, prevention and treatment of mental casualties. In combat zones it will be his duty to sift and clear casualties of this type, with the object of returning to duty all personnel possible.

PROCUREMENT AND ASSIGNMENT SERVICE FOR PHYSICIANS, DENTISTS AND VETERINARIANS

HOSPITALS NEEDING INTERNS AND RESIDENTS

The following hospitals have indicated to the Council on Medical Education and Hospitals that they have not completed their Procurement and Assignment Service quotas for Jan. 1, 1944.

1. Prospective interns who have not yet obtained a hospital appointment should communicate with these institutions either directly or through the office of the dean of their medical school. Assistant residents and residents should direct their applications to the hospital superintendent in the usual manner.

2. Institutions having a shortage of interns or residents are again invited to make their needs known to the Council on Medical Education and Hospitals. In reporting shortages, hospitals should indicate the number of interns, assistant residents and residents needed to complete their quotas for Jan. 1, 1944.

Hospitals Reporting Vacancies for Interns or Residents

(Continuation of list in THE JOURNAL, November 20, p. 775).

ALABAMA

Baptist Hospitals, Birmingham. Capacity, 216; admissions, 6,887. Mr. C. L. Sibley, Superintendent (1 resident—mixed).

ARKANSAS

Leo N. Levi Memorial Hospital, Hot Springs. Capacity, 75; admissions, 845. Regina H. Kaplan, Administrator (1 resident—mixed).

CALIFORNIA

Queen of Angels Hospital, Los Angeles. Capacity, 390; admissions, 11,242. Sister M. Febronia, R.N., Superintendent (5 interns).

COLORADO

Memorial Hospital, Colorado Springs. Capacity, 204; admissions, 2,693. Mr. Edward Rowlands, Superintendent (2 residents—mixed).

Corwin Hospital, Pueblo. Capacity, 228; admissions, 3,932. Samual B. Potter, Chief Surgeon (4 interns).

Sanatorium of the Jewish Consumptives Relief Society, Spivak. Capacity, 300; admissions, 139. Dr. Arthur Rest, Medical Director (1 resident—TB).

DISTRICT OF COLUMBIA

Episcopal Eye, Ear and Throat Hospital, Washington. Capacity, 100; admissions, 6,374. Deaconess Anna E. Macdonald, Superintendent (3 residents—oph., otol.).

FLORIDA

Riverside Hospital, Jacksonville. Capacity, 60; admissions, 1,662. Mr. W. A. Nelles, Superintendent (1 resident—mixed).

ILLINOIS

Alexian Brothers' Hospital, Chicago. Capacity, 272; admissions, 5,190. Brother Hugh Miller, R.N., Superintendent (3 interns).

Columbus Hospital, Chicago. Capacity, 170; admissions, 3,490. Mother Grace, Superintendent (2 interns).

Garfield Park Community Hospital, Chicago. Capacity, 182; admissions, 6,113. Mr. C. J. Hassenauer, Superintendent (3 interns).

Henrotin Hospital, Chicago. Capacity, 129; admissions, 3,139. Miss Veronica Miller, R.N., Superintendent (4 interns).

Holy Cross Hospital, Chicago. Capacity, 168; admissions, 4,967. Sister M. Dorothea, R.N., Superintendent (assistant resident).

Mother Cabrini Memorial Hospital, Chicago. Capacity, 144; admissions, 4,283. Mother Agnes, R.N., Superintendent (2 interns).

Norwegian-American Hospital, Chicago. Capacity, 231; admissions, 7,611. William I. Slover, Superintendent (2 residents—med., surg.).

Roseland Community Hospital, Chicago. Capacity, 129; admissions,, 3,975. Mr. E. O. Massmann, Administrator (3 interns).

St. Anne's Hospital, Chicago. Capacity, 340; admissions, 9,480. Sister M. Flavia, R.N., Superintendent (1 intern).

St. Mary of Nazareth Hospital, Chicago. Capacity, 294; admissions, 9,850. Sister M. Therese, Superintendent (5 interns).

U. S. Marine Hospital, Chicago. Capacity, 301; admissions, 2,750. H. E. Trimble, Medical Officer in Charge (4 interns).

Walther Memorial Hospital, Chicago. Capacity, 209, admissions, 4,825. Mr. William C. Martens Jr., Superintendent (4 interns).

Woodlawn Hospital, Chicago. Capacity, 140; admissions, 4,304. Grace L. DeVilbiss, R.N., Superintendent (3 interns).

Macon County Tuberculosis Sanatorium, Decatur. Capacity, 80; admissions, 79. Dr. David F. Loewen, Medical Superintendent (1 resident—TB).

St. Mary's Hospital, East St. Louis. Capacity, 296; admissions, 4,703. Sister M. Prosperia, R.N., Superintendent (1 intern).

Elgin State Hospital, Elgin. Capacity, 4,990; admissions, 2,000. Dr. Charles F. Read, Superintendent (6 residents—psychiatry).

St. Joseph's Hospital, Joliet. Capacity, 265; admission, 5,825. Sister M. Henrica, Superintendent (4 interns).

Moline Public Hospital, Moline. Capacity, 200; admissions, 5,184. Marguerite N. Brooks, R.N., Superintendent (2 interns, 1 resident—mixed).

INDIANA

St. Elizabeth Hospital, La Fayette. Capacity, 285; admissions, 5,719. Sister M. Amelia, R.N., Superintendent (1 intern).

Ball Memorial Hospital, Muncie. Capacity, 265; admissions, 6,266. Miss Nellie G. Brown, R.N., Superintendent (2 interns).

St. Anthony Hospital, Terre Haute. Capacity, 202; admissions, 3,388. Sister M. Gerhardis, Administrator (2 interns).

KANSAS

Menninger Sanitarium, Topeka. Capacity, 60; admissions, 107. Dr. Karl Menninger, Acting Medical Director (3 residents—psychiatry).

St. Francis Hospital, Wichita. Capacity, 422; admissions, 12,559. Sister M. Oswaldina, R.N., Superintendent (4 interns).

LOUISIANA

Hotel Dieu, Sisters Hospital, New Orleans. Capacity, 300; admissions, 9,484. Sister Alberta, Superintendent (2 residents—mixed).

MAINE

Saint Mary's General Hospital, Lewiston. Capacity, 175; admissions, 3,880. Sister Lachapelle, R.N., Superintendent (2 interns).

MARYLAND

Franklin Square Hospital, Baltimore. Capacity, 288; admissions, 4,726. Jean Hand, R.N., Superintendent (4 interns, 3 residents—surg. OB, med.).

MASSACHUSETTS

Burbank Hospital, Fitchburg. Capacity, 250; admissions, 4,052. Mr. Richard Bullock, Directing Trustee (3 interns).

Providence Hospital, Holyoke. Capacity, 200; admissions, 4,125. Sister M. Stanislaus, Superintendent (interns).

Quincy City Hospital, Quincy. Capacity, 334; admissions, 9,126. Dr. Joseph P. Leone, Medical Superintendent (3 interns, 1 asst. resident).

MICHIGAN

Eloise Hospital and Infirmary, Eloise. Capacity, 3,768; admissions, 4,746. Dr. Charley J. Smyth, Medical Director (8 interns).

Charles Godwin Jennings Hospital, Detroit. Capacity, 89; admissions, 2,249. Mr. Willis J. Gray, Superintendent (2 residents—surg., mixed).

St. Joseph Mercy Hospital, Pontiac. Capacity, 359; admissions, 7,763. Sr. M. Charles, R.N., Superintendent (2 residents—mixed).

St. Mary's Hospital, Detroit. Capacity, 375; admissions, 12,090. Sister Marie, Superintendent (intern).

MINNESOTA

Glen Lake Sanatorium, Oak Terrace. Capacity, 691; admissions, 502. Dr. Ernest S. Mariette, Medical Superintendent (1 resident—TB).

St. Peter State Hospital, St. Peter. Capacity, 2,306; admission, 582. Dr. George H. Freeman, Medical Superintendent (1 resident—psychiatry).

MISSOURI

State Hospital No. 1, Fulton. Capacity, 2,837; admissions, 416. Dr. C. C. Ault, Superintendent (1 resident—psychiatry).

Menorah Hospital, Kansas City. Capacity, 166; admissions, 4,103. Mr. F. A. Tobin, Superintendent (3 interns).

State Hospital No. 2, St. Joseph. Capacity, 2,952; admissions, 411. Dr. F. A. Carmichael, Superintendent (5 residents—psychiatry).

St. Anthony's Hospital, St. Louis. Capacity, 257; admissions, 6,187. Sister M. Florina, Superintendent (1 intern).

NEBRASKA

Nebraska Orthopedic Hospital, Lincoln. Capacity, 110; admissions, 684. Dr. F. A. Alcorn, Superintendent (1 resident—orth.).

Norfolk State Hospital, Norfolk. Capacity, 1,120; admissions, 180. Dr. G. E. Charlton, Medical Superintendent (2 residents—psychiatry).

NEW JERSEY

William McKinley Memorial Hospital, Trenton. Capacity, 157; admissions, 3,045. Mr. William B. Meytrott, Superintendent (2 interns).

NEW YORK

Auburn City Hospital, Auburn. Capacity, 240; admissions, 5,530. Jerome F. Peck Jr., Acting Superintendent (1 resident—mixed).

Norwegian Lutheran Deaconesses' Home and Hospital, Brooklyn. Capacity, 200; admissions, 4,793. Rev. C. O. Pedersen, Rector (3 interns).

St. Mary's Hospital, Brooklyn. Capacity, 328, admissions, 5,351. Sister M. Helen, Superintendent (4 interns).

Buffalo State Hospital, Buffalo. Capacity, 2,557; admissions, 690. Dr. Christopher Fletcher, Medical Superintendent (1 resident—psychiatry).

Mercy Hospital, Buffalo. Capacity, 198; admissions, 5,334. Sister Mary Mechtilde, Superintendent (2 interns).

St. Joseph's Hospital, Elmira. Capacity, 279; admissions, 5,669. Sister Margaret Adelaide, R.N., Superintendent (4 interns).

Jamaica Hospital, Jamaica. Capacity, 229; admissions, 5,262. Mr. F. C. Leupold, Superintendent (2 interns).

St. John's Long Island City Hospital, Long Island City. Capacity, 292; admissions, 5,506. Sister Mary Visitatio, Superintendent (7 interns).

Hospital for Joint Diseases, New York. Capacity, 355; admissions, 6,113. Dr. Jacob J. Golub, Director (3 interns).

Ellis Hospital, Schenectady. Capacity, 470; admissions, 12,275. Miss Mary G. McPherson, R.N., Administrator (7 interns).
General Hospital, Syracuse. Capacity, 110; admissions, 2,938. Mr. Carl P. Wright, Superintendent (1 intern).
Jefferson County Sanatorium, Watertown. Capacity, 78; admissions, 83. Dr. S. E. Simpson, Superintendent (1 resident—TB).
Yonkers General Hospital, Yonkers. Capacity, 180; admissions, 3,873. Mr. Charles E. Croft, Superintendent (1 intern).

OHIO

Peoples Hospital, Akron. Capacity, 200; admissions, 8,772. Miss Eva P. Craig, R.N., Superintendent (3 interns).
Fairview Park Hospital, Cleveland. Capacity, 201; admissions, 5,899. Rev. Philip Vollmer Jr., Superintendent (1 intern).
Good Samaritan Hospital, Dayton. Capacity, 350; admissions, 7,999. Sister Frances Maria, Administrator (2 interns, 1 resident).
St. Elizabeth Hospital, Dayton. Capacity, 365; admissions, 8,560. Sister Virgila, R.N., Administrator (3 interns).

PENNSYLVANIA

Hamot Hospital, Erie. Capacity, 255; admissions, 6,334. Mr. Donald M. Rosenberger, Director (1 intern).
Conemaugh Valley Memorial Hospital, Johnstown. Capacity, 364; admissions, 6,751. Dr. H. B. Anderson, Medical Director (5 interns).
American Oncologic Hospital, Philadelphia. Capacity, 51; admissions, 548. Miss F. C. Martin, Superintendent (2 residents—cancer).
St. Joseph's Hospital and Dispensary, Pittsburgh. Capacity, 120; admissions, 3,322. Sister Anna Regina, Superintendent (4 interns).
Shadyside Hospital, Pittsburgh. Capacity, 302; admissions, 6,770. Mr. J. S. Hammond, Acting Superintendent (1 intern).
South Side Hospital, Pittsburgh. Capacity, 225; admissions, 5,227. Miss Gertrude L. Heatley, R.N., Superintendent (1 intern, 2 asst. residents).
Pottsville Hospital, Pottsville. Capacity, 172; admissions, 2,801. Major Roger A. Greene, Superintendent (2 interns).
Columbia Hospital, Wilkinsburg. Capacity, 219; admissions, 4,615. Miss Martha R. Speer, R.N., Superintendent (1 resident—mixed).

TENNESSEE

T. C. Thompson Children's Hospital, Chattanooga. Capacity, 84; admissions, 1,298. Miss E. Sikes, R.N., Superintendent (asst. resident—ped.).
Baptist Memorial Hospital, Memphis. Capacity, 500; admissions, 15,434. Mr. George D. Sheats, Administrator (4 interns).

TEXAS

Methodist Hospital, Dallas. Capacity, 206; admissions, 5,545. E. B. Germany, Administrator (4 interns, asst. resident).

WISCONSIN

Madison General Hospital, Madison. Capacity, 203; admissions, 7,157. Miss Grace Crafts, R.N., Superintendent (resident—mixed).
Columbia Hospital, Milwaukee. Capacity, 160; admissions, 4,267. Mr. Joseph G. Norby, Superintendent (3 interns, 1 resident).
Evangelical Deaconess Hospital, Milwaukee. Capacity, 170; admissions, 5,351. Rev. J. P. Meyer, Superintendent (2 interns).
Mount Sinai Hospital, Milwaukee. Capacity, 195; admissions, 7,903. Mr. Harry L. Eisen, Acting Superintendent (intern, resident).
Milwaukee Sanitarium, Wauwatosa. Capacity, 147; admissions, 332. Dr. Lloyd H. Ziegler, Medical Director (1 resident—psychiatry).

MISCELLANEOUS

WARTIME GRADUATE MEDICAL BULLETIN

The Bulletin of the Wartime Graduate Medical Meetings made its first appearance on November 15 to present the exchange of ideas for the twenty-four regions participating in the programs of these courses. The bulletin will serve as a medium to discuss the various problems arising in different regions as well as publicize each program. Comdr. Edward L. Bortz (MC), U.S.N.R., 4200 Pine Street, Philadelphia, is chairman of the central committee of the Wartime Graduate Medical Meetings, which is sponsored by the American Medical Association, American College of Physicians and the American College of Surgeons. The meetings are authorized by the surgeons general of the Army, Navy and U. S. Public Health Service.

REFRESHER COURSES FOR NURSES

Federal funds are available under the Bolton act to assist in conducting refresher courses for inactive graduate nurses, according to an announcement directed to the country's 1,300 accredited schools of nursing and to the directors of nursing services in the approximately 1,000 approved hospitals without schools. The program is intended to prepare nurses for return to active service and, in areas where there are large numbers of inactive graduate nurses, schools and hospitals are urged to participate in the plan. The courses may vary in length from six weeks to three months with variation allowed in the time spent in practice each week. Information may be obtained from the Division of Nurse Education, U. S. Public Health Service, Washington, D. C.

BRITISH SURGEONS AID WOUNDED IN NAZI PRISON CAMPS

Two British army doctors, Major W. R. Henderson and Dr. Derek Taverner, twice, when they could have been saved, accepted imprisonment by the Nazis in order to continue their work of caring for wounded United Nations prisoners. Since their capture at Dunkirk they have conducted a mobile hospital which tours prison camps throughout Germany and Poland. Because of the scarcity of chloroform they perform all but the most difficult operations without anesthetics. Under the most harrowing conditions they work on men with shattered nerves and bad head wounds, reconnecting nerves severed by bullets and shell splinters and thereby restoring useless limbs to service. The names of the two doctors have become almost legendary in every prison camp. Their work and their determination to continue have won the trust of the Germans, and they are provided with special escorts and such facilities as are available. Major Henderson and Dr. Taverner went to the front line in France with the first Nuffield neurosurgical unit in May 1940. While the Germans were advancing toward Dunkirk they were treating more than 100 men. When told to leave, they refused and instead sent the nurses to safety and quietly went on operating. The Germans found them still at work and took the two men and their patients prisoners. When repatriation plans were discussed recently the doctors were told that they could return to England. Again they chose to remain. There is now no question in the minds of the Germans or of the injured British, American and Canadian prisoners that the two men would not escape if they could.

PUBLIC HEALTH UNDER HITLER

According to NDZ of August 19, serious hemorrhage, burns, frozen limbs and nervous shock may result in death if the blood pressure falls dangerously owing to loss of blood. German science, however, has discovered a method which is saving many men's lives: the preserved serum. Oberfeldarzt Prof. Dr. Lang, the head of the Institute for Physiologic and Military Chemistry in the Military Academy, said in an interview: The fact that in this war it has been possible to rehabilitate a considerably larger proportion of our wounded than in the last war—between 80 and 90 per cent—sufficiently to enable them to return to their units is convincing proof of the great successes of German military medicine, particularly war surgery. In the frequently very primitive conditions at the front, blood transfusions are not as a rule possible. Research carried on in the institute has shown that the serum derived from blood comprising the vital salts and albumin is completely effective. Thousands of tubes save the lives of innumerable seriously wounded men. It keeps for an unlimited time in its dried form and is simple to use. Another advantage is that the preserved serum can be given without regard to the blood group to which the individual belongs because it does not contain the substances which distinguish the four blood groups and therefore can be used for them all. More recently the serum has also proved valuable in the treatment of children. Infants suffering from dangerous digestive disturbances have been given valuable nourishment by means of the preserved serum, and their lives have thus been saved.

According to *Burgaski Phare* of July 7, certain Bulgarian doctors point out the necessity of opening a faculty of medicine at the University of Skoplje. This is imposed by two causes: (*a*) the health situation in the liberated lands did not progress during serfdom, and (*b*) there are too many professors at the faculty of medicine in Sofia.

ORGANIZATION SECTION

OFFICIAL NOTES

REPORT OF MEETING OF MATERNAL AND CHILD HEALTH ADVISORY COMMITTEE

Children's Bureau, U. S. Department of Labor

On October 21 the Maternal and Child Health Advisory Committee of the U. S. Children's Bureau met at the Department of Labor in Washington. The committee was called together to consider policies relating to the administration of the emergency maternity and infant care program.

The attendance at the Advisory Committee meeting was as follows:

Presiding: Nicholson J. Eastman, M.D., Baltimore.

Present:
Dr. Fred L. Adair, Chicago.
Dr. W. W. Bauer, Chicago.
Miss Harriett M. Bartlett, Cambridge, Mass.
Dr. Jessie M. Bierman, San Francisco.
Dr. Wilbert C. Davison, Durham, N. C.
Dr. M. Edward Davis, Chicago.
Dr. Robert L. DeNormandie, Boston.
Dr. A. W. Dumas Sr., Natchez, Miss.
Dr. Clifford G. Grulee, Evanston, Ill.
Dr. Henry F. Helmholz, Rochester, Minn.
Dr. George W. Kosmak, New York.
Dr. Leon R. Kramer, Topeka, Kan.
Miss Ruth E. Lewis, St. Louis.
Dr. Joseph I. Linde, New Haven, Conn.
Lieut. Col. Basil C. MacLean, Washington, D. C.
Dr. Alice F. Maxwell, San Francisco.
Dr. Alice N. Pickett, Louisville, Ky.
Dr. E. D. Plass, Iowa City.
Dr. Grover F. Powers, New Haven, Conn.
Dr. Nathan Sinai, Ann Arbor, Mich.
Dr. Francis Scott Smyth, San Francisco.
Dr. George S. Stevenson, New York.
Dr. George M. Wheatley, New York.
Dr. Philip F. Williams, Philadelphia.
Dr. C.-E. A. Winslow, New Haven, Conn.

Representing the U. S. Children's Bureau:
Miss Katharine F. Lenroot, chief.
Dr. Martha M. Eliot, associate chief.
Dr. Edwin F. Daily, director, Division of Health Services.

In opening the meeting Miss Lenroot and Dr. Eliot reviewed the legislative history leading up to the appropriation of funds for the emergency maternity and infant care program, the steps in the establishment of state plans and national administrative policies, and the current situation in respect to state programs.

In response to questions a brief description was given of the origin of the program. For the benefit of committee members not present at the meeting of the medical members of the committee held on April 6, 1943 following the approval of the first special appropriation for this program, an amplified statement, as presented in April, is given here.

The first request for funds to care for wives of enlisted men came to the Washington State Health Department in the summer of 1941 from the commanding officer of Fort Lewis, who asked for assistance in obtaining maternity care for the wives of enlisted men at that post. When submitting this project to the Children's Bureau for approval under the maternal and child health provisions of the Social Security Act, the state health agency explained that, prior to the war and the rapid increase in the number of enlisted men stationed at the fort, maternity care had been provided at the fort hospital. By the summer of 1941, however, the facilities of the Army hospital could no longer accommodate the large number of wives seeking maternity care. The project was approved by the Children's Bureau in July 1941. Antepartum, delivery and postpartum medical, hospital and nursing care were made available for these young wives, many of whom were at considerable distances from their homes. The need for medical care for these wives arose not only from their inability to pay for care but from the fact that they were nonresidents of the state or county, in most cases strangers in the towns where they lived and wholly uninformed as to medical resources. There was no organized plan under which maternity care could be given. The plan set up by the state health agency provided the necessary organization for the program, payment for doctor and hospital, and arrangements for public health nurse and social worker.

The program in the state of Washington came to the notice of other state health agencies, and during succeeding months a number of health officers made inquiry as to whether comparable plans could be established to meet similar needs in other military areas. Red Cross and Army Emergency Relief officers reported a rapidly increasing need. The Conference of State Health Officers, meeting with the Children's Bureau in March 1942, requested that the Children's Bureau set aside a portion of the federal funds available to the states to be used as grants for these special projects. By the fall and early winter of 1942 it was apparent that funds available under title V of the Social Security Act would not meet the need. By December 1942 twenty-five states had initiated programs but did not have sufficient funds to continue them for more than a few months.

The first special appropriation of $1,200,000 for the emergency maternity and infant care program was made in March 1943, to make possible the continuation of programs initiated under the provisions of title V of the Social Security Act and their extension to other states and areas as needed.

In making this appropriation the Congress made clear its purpose in doing so, namely to provide at no cost to the enlisted man or to his wife complete maternity care for the wife and medical and hospital care for the infant during the first year of life. That the care to be provided was something to which the wife was entitled, if she applied for it, was also clear. The legislative history shows that in making provision for this maternity and infant care the Congress had in mind the effect the assurance of such care would have on the morale and peace of mind of the enlisted man himself. The record is clear in connection with the first appropriation in March and the two subsequent appropriations in July and in September 1943 that this morale building factor was one of the primary purposes in the minds of the Senators and Representatives.

In administering the program, therefore, constant consideration has been given by the Children's Bureau to the development of policies that would give reassurance to the enlisted man that in his absence his wife and child would be given the care needed and that no administrative procedures, such as a financial investigation, would be used that would leave uncertainty in his mind as to whether or not care would be given or whether the care would depend on his wife's ability to pay even part of the cost. The discussions in the congressional committees leave no doubt as to the intent of Congress on these points.

On Oct. 1, 1943 forty-four states, Alaska, Hawaii and the District of Columbia were operating emergency maternity and infant care programs under approved plans. Three of the four remaining states have submitted plans which will probably be approved in November.[1] The program of care is therefore almost as widespread geographically as the draft of enlisted men under the Selective Training and Service Act of 1940.

Reports from the states on Oct. 1, 1943 showed that care had been authorized in approximately 70,000 cases.[2] Estimates based on the size of the Army, the proportion of married men, the reported number of pregnancies among the wives, as shown by special studies, and experience in the program to date indicate that approximately 300,000 wives may be expected to apply for care during the current year. To provide the necessary funds, Congress has appropriated $23,000,000 for the fiscal year ending June 30, 1944.

Reports of discussion in congressional committees show that Congress understands and appreciates the contribution to the war effort that is being made by physicians in caring for the wives of enlisted men and recognizes the financial sacrifice that some physicians are making by their participation in this program that has as its objective the maintenance of morale among the fighting men at the front through the care of their wives and infants at home.

The introductory remarks were followed by a brief statement by Dr. Daily of certain legal provisions and administrative policies and procedures concerning which numerous questions have been raised. To point up the issues, certain questions were placed before the committee for discussion and recommendation, and other questions emerged in the course of discussion. The questions discussed by the committee were as follows:

1. *Should the program provide cash benefits to enlisted men's wives instead of payments to physicians and hospitals for services rendered?*

1. The plan for Colorado was approved November 10.
2. By Nov. 1, 1943 a total of approximately 100,000 cases had been reported as under care.

Dr. Bauer reported that the American Medical Association at its meeting last June passed a resolution on this point, as follows:

(*a*) That the action of the federal government in making funds available for maternity and infant care for the wives and infants of enlisted men be approved, and (*b*) that adoption be urged of a plan under which the federal government will provide for the wives of enlisted men a stated allotment for medical, hospital, maternity and infant care similar to the allotments already made and provided for the maintenance of dependents, leaving the actual arrangements with respect to fees to be fixed by mutual agreement with the wife and the physician of her choice.

Dr. Bauer also presented an analysis of recent attitudes of state medical associations from various parts of the country, showing that eight out of twenty-four favored cash allotments paid directly to the men's wives.

Discussion by members of the committee brought out the following points of view:

"I think the members of the medical profession believe that the relationship between the patient and the physician should have no intermediary and that the interposition of a state agency does not serve the best interests of all concerned." . . . "It was the intent of the act and of the Children's Bureau to do away with all anxiety on the part of the wife and the husband absent on military service concerning discussion of fees and meeting the cost of medical care." . . . "All experience connected with cash indemnification for medical service (not for some of the other things that people receive, but for medical service) points in the direction of discarding the principle of cash indemnity because it doesn't work. When cash is paid to the potential patient, it too rarely gets to the physician or to the hospital. The action taken by one medical society after another in setting up their medical service plans is an index of the direction this question is taking; that is, toward a service program with elimination of cash indemnification." . . . "Because of their experience with similar subsidy arrangements I believe the overwhelming number of hospitals would prefer to be paid directly by the state health agency under this program."

Discussion also brought out the point that a uniform grant would not take into account differences in individual cases due to variation in medical needs. It was further recognized that the situation regarding cash allotments has already been determined by Congress, which decided by a vote in the House of Representatives of 115 to 8 not to shift the program from payment for service to cash allowances. In view of this fact no action was taken by the committee beyond this general discussion.

2. *Should the rate of payment established by each state health agency for "complete maternity care" be assumed to include all services rendered by the attending physician throughout pregnancy, during labor and six weeks post partum?*

Dr. Daily opened the discussion on this question by stating that the Children's Bureau had recommended that each state health agency establish an inclusive rate of payment to cover all services rendered by the attending physician during pregnancy, labor and six weeks post partum, including treatment of intercurrent conditions. It was pointed out by several members of the committee that a specialist in obstetrics or a general practitioner in a large city, when confronted with a serious non-obstetric complication during pregnancy such as might require operative intervention, could call in a surgical consultant under the program who would be paid by the state health department for performing the operation, whereas in the small community the general practitioner might have to perform the operation himself and, under the existing policy, could be paid no additional amount under the program. It was also pointed out by members of the committee that occasionally patients had intercurrent conditions not related to pregnancy requiring prolonged bed care with considerable additional service by the attending physician and that he could not be given additional reimbursement for such service under the present policies.

Considerable discussion was precipitated by an attempt to define what might be considered as included in "complete maternity care." Some opinions expressed on this point were as follows: "I don't think it is fair to ask a physician to take care of a pregnancy, and then everything that piles up in the way of human ills during the time of pregnancy should be saddled on him too." . . . "We should divide these cases into those in which there are complications of an obstetric nature and those in which some intercurrent disease develops, making it necessary to utilize other knowledge possessed by either the general practitioner or a consultant." . . . "Nobody can possibly control a service where there would be an extra payment for every minor condition, but if it is held to relatively major conditions it does lend itself to control."

The committee with only one dissenting vote passed the following recommendation:

> That the basic rate of payment for complete maternity care (established by each state health department for payments to participating physicians) should not be assumed to include the treatment of intercurrent conditions not directly attributable to pregnancy which involve major surgery or bed care of more than seven days.

The discussion brought out the fact that the Children's Bureau would necessarily have to consider carefully the feasibility of changing the policy along the line recommended and how it would affect administration of the program in the states.

The question was raised as to whether full dental services should be included as part of maternity care under the program. It was agreed that this would be a desirable goal but that present funds do not permit this development and that the most that might be included now would be payment to dental consultants for services to selected patients.

3. *Should the amount paid by the state health departments to participating physicians for complete maternity care be the only payment to the physician for services rendered under the program?*

The committee commented on this subject as follows: "If physicians can charge these patients additional fees, there is no point in having a program." . . . "I think it puts the medical profession in a pretty bad light if they are going to throw aside this assistance to enlisted men's families to argue about additional fees." . . . "I think if the underlying philosophy of this program had been more adequately explained through the medical journals that much of this discussion would not have arisen. The physicians do not want to get more money out of these patients, they want to have the fact recognized that the integrity of the medical profession can be depended on." At the conclusion of the discussion an expression of opinion was requested from the members.

> The committee voted without dissent by a showing of hands that it was in accord with the policy that rates of payments under the program should be fixed and that physicians participating in the care of wives and infants of enlisted men under the program should not charge additional amounts to the patient over and above the amount received from the state health agency for services rendered under the program.

4. *How should payment be made for professional services rendered to patients seeking care in hospitals connected with medical schools, when these services are customarily provided by salaried physicians employed by medical schools?*

Several discussers stated that it is unpractical to attempt to divide the costs of service and teaching in such instances, since hospital and medical school budgets are so interdependent. The discussion brought out such a variety of practices in different hospitals connected with medical schools and so many unsolved problems that:

> The committee voted to ask the chairman to appoint a small subcommittee to consider the question of payment for professional services provided by salaried physicians employed by medical schools and to make recommendations.

5. *Should state emergency maternity and infant care programs provide that the enlisted men's wives have free choice in applying for care in voluntary or government hospitals and clinics as well as in offices of private practitioners?*

The present Children's Bureau policy of free choice of existing facilities was discussed. It had been brought out earlier in the meeting that the question had arisen in several of the states as to whether the state health departments should use the funds in paying for care in hospitals that had outpatient and inpatient services, where in the past it had been customary to accept maternity patients, usually on the basis of a flat rate covering medical services rendered by the house staff and hospital care. There had been strong feelings in some places that this type of service should be excluded under the program. It was reported that in one instance the suggestion had been made that all wives of enlisted men who applied for care at clinics be referred to private practitioners on the staff at the hospital. A member of the committee pointed out that this would be equivalent to telling the patient "You cannot go to a voluntary hospital or municipal hospital (for these services). You have to go to a private practitioner."

It was evident from the general trend of the discussion that the committee supported the policy:

> That enlisted men's wives should have free choice of all existing facilities in any community for care of themselves

and their infants and that the state agency should make suitable arrangements for payment for care in clinics, hospitals and private practice.

Endorsement was given without dissent (by a showing of hands).

6. *Should all infants born under the program be routinely referred to child health conferences where available?*

Under the provision of the congressional act the funds for emergency maternity and infant care may not be expended to purchase "similar services otherwise available." This has been interpreted to mean free services provided through the Army or Navy or by or through state or local health departments. State and local health departments are now conducting more than five thousand child health conferences under their regular maternal and child health programs, and many more are available in cities. Therefore, wherever such child health conferences are available the state health agencies have referred infants cared for under the program to such conferences for well child supervision. It has been the policy of the Children's Bureau that these facilities should be used.

In response to a question concerning the use of funds under the emergency maternity and infant care program for child health supervision, it was explained by Dr. Eliot that, in communities where there are no child health conferences, such conferences may be established by the use of maternal and child health funds under title V of the Social Security Act, or, if the number of infants in a community is too small to warrant the establishment of a conference, physicians trained or experienced in the care of infants and children may be paid for health supervision at a rate of payment not to exceed a fixed amount per month or year comparable in general to the cost of supervision in child health conferences. It was suggested by one member of the committee that it would be preferable to use a fixed annual rate for child health supervision when payment is made to private physicians.

Committee members pointed out that some community agencies require mothers to bring referral slips from private practitioners before being accepted by child health conferences—a requirement which presents problems for many mothers, particularly those who have no private physician. It was reported that in some communities the general practitioners are so busy that they are referring all infants to child health conferences for well baby supervision, while in other places the physicians wish to provide well baby supervision in their own offices. Evidence showed that many pediatricians in private practice are already working overtime and cannot accept more responsibilities.

During the discussion the statement was made that, "If you start the custom of sending all these infants to child health conferences, the result will be a reduction in the private practice of pediatrics." . . . "The program should also make arrangements to pay pediatricians for well child supervision." . . . "The job before us now is to take care of these children and leave the implications of what we are doing." Other committee members stated: "I think it is the logical procedure to take care of these infants in child health conferences wherever available . . . I think our difficulty is that we have not nearly enough well child conferences." "It seems to me we have to use all facilities available to take care of these babies." Some one pointed out that child health conferences had been organized originally to meet the needs of just such mothers and infants as those included in the program. The low pay rate of the enlisted men in the lowest grades ($50 to $78 per month) and the low allowance for the wife with no child ($50 per month, of which $22 is paid by the husband from his salary) or with one child ($80) were cited in this connection by Dr. Eliot.

At the conclusion of the discussion the chairman stated that it was the sense of the meeting that all existing facilities for care of well babies should be made available to infants under the emergency infant care program. There was no dissent.

A related question, also briefly discussed, was the payment of the pediatrician for care of the newborn infants. The chairman summarized this discussion as follows:

That the state health agency should authorize payment to a pediatrician for the care of the newborn infant when the obstetrician customarily does not give such care, which statement members of the committee accepted without dissent.

7. *Should all applicants accepted for care under the emergency maternity and infant care program be referred for antepartum, postpartum or infant nursing services?*

It was reported that some physicians do not wish to have public health nurses visit the patients under their care. The public health nursing program of state and local health departments was described as public service supported by tax funds which should be made available to any individual in the community. The same general principle should apply to public health nursing service of a voluntary agency. A member of the committee remarked "I can't see any reason why a physician who understands the function of the public health nurse would not welcome her cooperation, but the fact remains that many physicians do not understand these functions." The chairman stated, without dissent from any members, that the committee appeared to be fully agreed:

That all patients accepted for care should be routinely referred for public health nursing service wherever it could be made available through official or voluntary agencies.

8. *Should the consultation services of specialists in various fields be made available wherever possible to general practitioners participating in the program?*

It was pointed out that most of the state health agencies have approved lists of consultants in various specialties who may be called by other physicians for bedside or telephone consultation, assistance in operations, or actually to perform operations. These consultants are paid by the state health agencies for such services. It was stated that perhaps the greatest contribution that specialists in obstetrics or pediatrics could make in the program would be giving advice and assistance as needed by physicians with less specialized training and experience. It was pointed out that the rate of payment to the attending physician is not reduced when he calls a consultant for advice or assistance. The chairman summarized the discussion by stating that it indicated the desire for greater utilization of consultant services in the program.

9. Several members of the committee stated that they believed this advisory committee would be more representative if it included several general practitioners, and the committee voted to recommend that at least five general practitioners be added to the advisory committee. (After the meeting adjourned members of the committee suggested that additional pediatricians in private practice should also be appointed.) Some of the committee members stated that they believed many of the misunderstandings concerning the program could have been avoided if complete information had been more widely distributed to the medical profession through the medical journals and to the public through the public press.

At the close of the meeting Dr. Daily expressed gratitude to the committee for its suggestions and recommendations, which he said would be given full consideration by the Children's Bureau in determining policies for future administration of the program.

WOMAN'S AUXILIARY

Colorado

The annual meeting of the Woman's Auxiliary to the Colorado State Medical Society was held in September at the home of Mrs. H. B. Caton, Englewood. Mrs. W. W. King, president, presided at the business session, at which the following officers were elected: Mrs. Lawrence T. Brown, Denver, president; Mrs. A. W. Gather, Pueblo, president-elect; Mrs. George E. Pattee, Denver, first vice president; Mrs. James Rigg, Mesa, second vice president; Mrs. C. S. Lockwood, Montrose, third vice president; Mrs. R. S. Johnston, Oter, fourth vice president; Mrs. A. A. Wearner, Denver, treasurer; Mrs. H. H. Heuston, Boulder, secretary; Mrs. John S. Bouslog, Boulder, corresponding secretary; Mrs. John G. Ryan, Denver, auditor, and Mrs. G. C. Milligan, Arapahoe, parliamentarian.

New Jersey

The Executive Board of the Woman's Auxiliary to the Medical Society of New Jersey held its fall meeting and luncheon, October 11, at the Essex House. Mrs. Asher Yaguda, state president, outlined the program to be followed by the state auxiliary this year.

The Essex and Hudson County auxiliaries begun their year's work with luncheon meetings recently.

Medical News

(PHYSICIANS WILL CONFER A FAVOR BY SENDING FOR THIS DEPARTMENT ITEMS OF NEWS OF MORE OR LESS GENERAL INTEREST: SUCH AS RELATE TO SOCIETY ACTIVITIES, NEW HOSPITALS, EDUCATION AND PUBLIC HEALTH.)

ARKANSAS

Dr. Grayson Resigns as State Health Officer.—Dr. William B. Grayson, Little Rock, state health officer since 1933, has resigned, effective November 15. Dr. Thomas T. Ross, Little Rock, state director of the bureau of local health service, has been appointed acting head, newspapers announced.

CALIFORNIA

Physicians Needed.—The Los Angeles County Civil Service Commission announces a nationwide search for physicians for positions in the Los Angeles County Hospital, Olive View Sanatorium, Olive View, and the Rancho Los Amigos, Hondo. There will be no written examinations. Graduation from an accredited medical school and completion of at least a one year internship are required. In addition, at least one year's recent experience in the practice of medicine is required for the tuberculosis physician position. Doctors 21 to 55 years of age are urged to apply for these positions. Applications will be accepted from doctors over 55 years of age who wish to apply for temporary positions as tuberculosis physician. Applications must be filed immediately. Persons interested in these positions, paying $285-339 and $335-389 respectively, may obtain applications and full information from the office of the Los Angeles County Civil Service Commission, Room 102, Hall of Records, Los Angeles 12.

Personal.—Dr. Samuel J. McClendon, San Diego, has been appointed a member of the California State Department of Public Health to succeed Dr. Francis M. Pottenger Sr., Monrovia, whose term expired.——Dr. Charles L. Ianne, San Jose, was appointed as examining physician in the men's health service and associate professor of hygiene in the department of health at Stanford University for the year 1943-1944. Dr. Ianne has been director of the Santa Clara County Sanatorium for the past fifteen years.——Dr. Frank W. Otto, Los Angeles, has been named a member of the California Board of Medical Examiners. He fills the vacancy left by Dr. Charles B. Pinkham, San Francisco, who resigned after thirty years of state service, most of which was spent as secretary-treasurer of the board. Dr. Otto is assistant clinical professor of medicine at the University of Southern California School of Medicine, Los Angeles.——Dr. Melvin J. Rowe Jr., Long Beach, has been appointed superintendent of the Mendocino State Hospital, Talmage, and Dr. Theo K. Miller, Camarillo, superintendent of the Napa State Hospital, Imola.——Dr. Frank E. Gallison, Ventura, has resigned as health officer of Ventura County. ——Dr. Howard C. Naffziger, professor of surgery, University of California Medical School, San Francisco, has returned after making a survey of military medicine in England Scotland, Sicily, North Africa and the Near East, *Science* reports.

San Francisco Society Observes Seventy-Fifth Anniversary.—The San Francisco County Medical Society celebrated its seventy-fifth anniversary, November 7. The commemorative program included a symposium on "The Future of Medicine," preceded by special clinics at the medical schools of Stanford University and the University of California. Speakers in the symposium included:

Dr. Sidney J. Shipman, San Francisco, Orientation.
Dr. Morris Fishbein, Editor, THE JOURNAL, The American Medical Association Looks at the Future of Medicine.
Dr. Anthony J. J. Rourke, San Francisco, A Medical Administrator Looks at the Future of Medicine.
Dr. Morton R. Gibbons Sr., San Francisco, The Future of Medicine from the Standpoint of the Physician in Practice.
Dr. Walter H. Brown, Palo Alto, A Public Health Physician Looks at the Future of Medicine.

The medical society has owned its own home since 1926. The building was the former Irwin mansion and currently houses the society's offices, meeting rooms and the Irwin Memorial Blood Bank. The first attempt to form a medical society in San Francisco occurred in 1850 in the early days of the gold rush. This pioneer group dissolved within a few months, but other societies were organized in 1851, 1853 and 1855. By 1865 all of these had disappeared because of the rapidly shifting population in the young city, internal disputes and the impact of the Civil War; many of the local doctors in early days had been Southerners. In 1868 the San Francisco County Medical Society was reorganized with 50 members and has been in continuous existence ever since. At the present time it has 1,187 members, of whom 1,116 are in active practice or on war leave.

DELAWARE

State Medical Election and Meeting.—Dr. Richard C. Beebe, Lewes, was chosen president of the Medical Society of Delaware at its recent annual session, October 12-13, in Wilmington, and Dr. Walter C. Deakyne, Smyrna, vice president. Other officers include Dr. William O. La Motte, Wilmington, secretary, and Dr. Winfield W. Lattomus, Wilmington, treasurer. Speakers at the meeting were:

Dr. Lawrence J. Jones, Wilmington, The Responsibility and Future of Organized Medicine.
Dr. William P. Belk, Wynnewood, Pa., The Clinical and Laboratory Management of Nephritis.
Dr. Anthony Sindoni Jr., Philadelphia, War Foods and Diabetes.
Capt. Louis C. Le Sieur, M. C., A. U. S., Aviation Medicine and High Altitude Flying.
Dr. Lemuel C. McGee, Wilmington, Medicine's Contribution to Industry.
Dr. John H. Foulger, Wilmington, The Value of Studies of the Circulation.
Dr. Edgar E. Evans, Penns Grove, N. J., The Effects of Industrial Gases on the Human Lungs.
Dr. William H. M. Erb, Ridley Park, Pa., The Treatment of Varicose Veins.
Dr. Charles Levy, Wilmington, Streptococcus Viridans Bacteremia.
Major Spencer T. Snedecor, M. C., A. U. S., War Wounds of the Extremities.
Col. James B. Brown, M. C., A. U. S., The Plastic Surgery of War Wounds.
Dr. Machteld E. Sano, Philadelphia, A New Method of Skin Grafting.
Dr. Charles W. Dunn, Philadelphia, Gynecomastia.
Dr. William Wayne Babcock, Philadelphia, The Operative Treatment of Cancer of the Rectum.

DISTRICT OF COLUMBIA

Ophthalmologic Meeting.—The semiannual meeting of the department of ophthalmology of George Washington University School of Medicine, Washington, will be held on December 4. Members of the staff will present case demonstrations and Col. Frederic H. Thorne, M. C., U. S. Army, will discuss "Military Aspects of Ophthalmology" and Dr. William Thornwall Davis, "Differential Diagnosis of the Vertical Motor Anomalies."

Changes in the Faculty at George Washington.—Dr. Preston A. McLendon, clinical professor of pediatrics, George Washington University School of Medicine, has been appointed executive officer in the department of pediatrics. Dr. Harry H. Donnally, professor and executive officer in the department of pediatrics, has resigned to become professor emeritus. Other changes in the faculty include the following promotions:

Dr. Ronald A. Cox to assistant clinical professor of ophthalmology.
Dr. Russell J. Fields to assistant clinical professor of dermatology and syphilology.
Dr. Edgar Leonard Goodman to assistant clinical professor of ophthalmology.
Dr. John A. Reed to assistant clinical professor of medicine.

ILLINOIS

Committee on School Health.—On October 29 in Chicago a group of Illinois officials and leaders in education and in public health formally organized the Illinois Joint Committee on School Health, unanimously electing as chairman Dr. Roland R. Cross, director of the state department of health. The committee, with the consultant services of Clair E. Turner, Dr.P.H., professor of biology and public health, Massachusetts Institute of Technology, Cambridge, Mass., will undertake a comprehensive survey of the school health needs in the state (THE JOURNAL, November 6, page 645). Functioning through a small liaison committee and ten subcommittees, the joint committee is preparing to outline what may prove to be the broadest and most far reaching school health program ever developed by any state, it is reported. The general topics in the public school health field will be:

The underlying principles relative to administration, educational procedures and cooperative relationships.
The specific objectives sought in terms of the pupils' habit formations, attitudes, behavior and knowledge.
The provision and maintenance of a healthful school environment, under both urban and rural conditions.
The whole question of school health services.
The routine health procedures in the classroom, and the organization of the school day in the interest of the mental and physical health of the pupil.
The health of the teacher.

In the teacher training field, general topics selected for study include:

Student health service.
The hygienic regimen of the student's day.
Health instruction, including instruction in health education methods, both academically and in the course of practice teaching.
In-service training through health education workshops, institutes, extension courses, summer courses and so on.

The complete membership for the new joint committee is not yet available. At a meeting of the organizing members in Springfield, October 26, plans were drawn up for the subcommittees which are to function in the various phases of the program.

Chicago

Portrait of Dr. Herrick Features Anniversary Celebration.—A bas-relief portrait of Dr. James B. Herrick, for many years a member of the staff of Presbyterian Hospital, was presented to the hospital during special exercises, November 6, commemorating the sixtieth anniversary of the hospital, the fortieth anniversary of the founding of the School of Nursing and the one hundredth anniversary of the admission of the first students to Rush Medical College. The portrait was presented by Dr. Ernest E. Irons, formerly dean of Rush Medical College, on behalf of the associates of Dr. Herrick. Another feature of the occasion was the gift of $20,000 in war bonds by Mrs. Clyde E. Shorey, president of the woman's board of the hospital, to establish a new maternity fund. The hospital also published a commemorative brochure titled "The Presbyterian Hospital and the Progress of Medicine, 1883-1943."

Fernel Sentenced for Food and Drug Violation.—Dr. Jean Paul Fernel, self-styled plastic surgeon, was found guilty, November 16, and sentenced to serve one year in the county jail and ordered to pay a fine of $500 on charges of violating the Federal Food, Drug and Cosmetic Act of 1938, newspapers report. The judge was Philip L. Sullivan, and the decision was given after a bench trial in federal district court. The government contended that Fernel "sold and transported drugs in interstate commerce which were not as represented on their labels." Fernel was granted a sixty day stay of execution pending an appeal. In passing sentence, Judge Sullivan is reported to have said "I am convinced that this was a well conceived scheme to defraud an unwary public and to extract money from the sick under false pretenses." Fernel was found guilty on all seven counts of an indictment charging him with misbranding six preparations which he claimed would cure a variety of human ills, from arthritis to sagging breasts, newspapers reported. Fernel has been at liberty under a bond of $1,500 since his arrest, it was stated.

KANSAS

The Hertzler Lecture.—Dr. Evarts A. Graham, Bixby professor of surgery, Washington University School of Medicine, St. Louis, will deliver the annual Arthur E. Hertzler Lecture on December 1 at the University of Kansas School of Medicine, Kansas City. His subject will be "Bronchiogenic Carcinoma of the Lung." The lecture was established in 1935 in honor of Dr. Hertzler by the Phi Beta Pi Medical Fraternity.

KENTUCKY

Changes in Health Officers.—Dr. Frank M. Melton, La Grange, has been named director of the Madison County Health Department, succeeding Dr. Max E. Blue, Richmond, who has been on leave of absence on account of ill health.——Dr. Chadwick W. Christine, Maysville, has resigned as head of the Mason County Health Department to return to private practice.

Graduate Courses.—The Kentucky State Medical Association sponsored a postgraduate course in Mayfield for four consecutive Thursdays, beginning October 28. Among the speakers were:

Dr. John B. Floyd, Louisville, Unrecognized Tuberculosis and X-Ray Findings.
Dr. Joseph G. Sherrill, Louisville, Cancer.
Dr. Sherrill, Fractures.
Dr. Alice D. Chenoweth, Louisville, Emergency Relief.
Dr. Benjamin L. Brock, Waverly Hills, Tuberculosis.
Dr. John E. Dunn, Paducah, Childhood Pneumonias.
Major Woodford B. Troutman, M. C., A. U. S., Heart Murmurs.
Dr. Aura J. Miller, Louisville, Pathology of the Heart.
Major Troutman, Coronary Thrombosis.
Dr. Henry G. Reynolds, Paducah, Glaucoma.
Dr. Doyle, Occupational Diseases.

MASSACHUSETTS

Anniversary of Ether Day.—On October 16 informal ceremonies at the Massachusetts General Hospital, Boston, marked the ninety-seventh anniversary of ether day. Dr. Nathaniel W. Faxon, director of the hospital, among other speakers, reviewed the work of Dr. William T. G. Morton, who successfully "administered ether vapor to produce unconsciousness, Oct. 16, 1846."

Dr. Aub Named Professor of Research Medicine.—Dr. Joseph C. Aub, since 1928 associate professor of medicine in the Harvard Medical School, Boston, has been appointed professor of research medicine. Dr. Aub graduated at Harvard in 1916 and has been a member of the staff of Harvard since 1919. The board of trustees of the Massachusetts General Hospital at its October meeting voted that the official name of Dr. Aub's laboratory shall be the Medical Laboratory of the Collis P. Huntington Memorial Hospital.

Gift to Tufts Building Fund.—A recent gift of $125,000 to the building fund of Tufts College Medical School, Boston, was announced by Leonard Carmichael, LL.D., president of Tufts College, October 6, during the fiftieth anniversary celebration of the medical school. The building fund has now received $746,000 of the $850,000 it had set as a goal. This total is exclusive of other contributions which were made for various other specific purposes in connection with the medical school. A congratulatory message from President Roosevelt was read during the commemoration exercises.

MICHIGAN

Dr. Darling Joins National Research Council.—George B. Darling, Dr.P.H., president and comptroller of the W. K. Kellogg Foundation, Battle Creek, has resigned to become associated with the division of medical science of the National Research Council. Dr. Darling joined the Kellogg Foundation in 1932 as associate director. He has been president of the organization since the death of the late Dr. Stuart Pritchard in 1940.

Corporation Formed for Medical Science Center.—Wendell W. Anderson has been elected president of the newly formed corporation for the proposed $50,000,000 Medical Science Center of Wayne University. Other officers include Ormond E. Hunt, vice president, Frederick J. Gartner, secretary, and B. Edwin Hutchinson, treasurer. The new corporation will select a site immediately and after approval by the Detroit Board of Education will go ahead with construction plans.

Personal.—Dr. Edward F. Fisher, councilman of Dearborn and member of the state legislature, has been appointed a member of the new board of Wayne County institutions.——Dr. Allan W. McDonald has severed his connection in Detroit to practice on Mackinac Island. In resigning from his activities with the Wayne County Medical Society, which he served as president in 1940-1941, Dr. McDonald stated that the community on Mackinac Island, consisting of about 600 persons, is now without a physician.

MINNESOTA

Three Counties Accredited for Tuberculosis Work.—On October 5 public ceremonies were held in Luverne to award certificates of accreditation in tuberculosis control to Rock, Nobles and Pipestone counties. Speakers included Governor Edward J. Thye. This program is a cooperative plan of the state medical association and the state department of health to accredit counties showing a tuberculosis mortality rate not to exceed 100 per hundred thousand of population and an incidence of tuberculosis infection among seniors in high school not to exceed 15 per cent. The program was launched in 1941, with Lincoln County receiving first honors on December 11 of that year. Olmsted, Murray and Steven counties were accredited during 1942, and the recent three counties bring the total to seven in the state now accredited for the control of tuberculosis. At the recent celebration special honor was paid to Dr. Charles L. Sherman, Luverne, president of the Southwestern Minnesota Sanatorium Commission since it was first appointed twenty-eight years ago, and Dr. Sidney A. Slater, Worthington, superintendent of the sanatorium since 1919, for their work in achieving the record, since five of the seven counties are in the Southwestern Minnesota Sanatorium district.

MISSISSIPPI

Personal.—Dr. Billy S. Guyton, who recently resigned as dean of the University of Mississippi School of Medicine, University (THE JOURNAL, September 25, p. 223), will continue as professor of surgery at the school, it was announced.——Dr. Henry G. Waldrop, Ripley, has been appointed health officer of Clarke and Wayne counties, effective September 1.

NEBRASKA

University News.—Dr. George E. Robertson has been promoted to associate professor of pediatrics at the University of Nebraska College of Medicine, Omaha, and Dr. Elmer W. Bantin to assistant professor of pediatrics.

Annual Assembly.—The Nebraska State Medical Association announces that it will hold its annual assembly May 1-4 at the Fontenelle Hotel, Omaha, at which the following topics will be considered: tropical diseases as they influence this commonwealth, nutrition in medicine and surgery, surgical treatment of upper abdominal pain, newer aspects of fracture treatment and uterine bleeding.

NEW YORK

Personal.—Dr. Bernard McD. Krug, New York, has been appointed commissioner of health of Cortland County for the duration of the war, effective November 7. He fills the vacancy left by Dr. William E. Mosher Jr., Cortland, who was granted leave of absence to enter military service (THE JOURNAL, October 23, p. 496).

The Wagner-Murray-Dingell Bill.—A special meeting of the Medical Society of the County of Monroe was held at the Rochester Academy of Medicine, Rochester, November 17, to discuss the Wagner-Murray-Dingell bill. Among the speakers were Hon. James E. Murray, U. S. Senator from Montana and co-author of the bill, Dr. Louis H. Bauer, chairman, Council on Medical Service and Public Relations, American Medical Association, Mr. Marion B. Folsom, co-chairman, council on postwar planning for Rochester and Monroe County, and Mr. Charles S. Wilcox, president, Rochester Hospital Service Corporation.

Harry D. Clough Memorial Prize.—The establishment of an award for house officers of the Rochester General Hospital, Rochester, to be known as the Harry D. Clough Memorial Prize, was announced October 22. The award, which will consist of a $25 cash prize, will be granted at the close of each weekly conference session to the house officer who has contributed most to the success of the conferences in the quality of case presentations, discussions and assistance in the selection of clinical material. The name of the winner will be placed on a special plaque which has been hung on the north wall of the conference room. The judging committee will be formed from staff members. The creation of the prize will be a fitting memorial to Dr. Clough, assistant medical director of the hospital, who died Oct. 1, 1942 and who worked for the development and improvement of the hospital conferences.

New York City

Macfadden Health Bureau Fined $500.—On November 9 the Macfadden Health Service Bureau, Inc., of 205 East 42d Street, pleaded guilty to the charge of unlawfully practicing medicine, which charge had been preferred by the state education department in the Court of Special Sessions of the City of New York, County of New York. The bureau was sentenced to pay a fine of $500.

Dr. Timme Receives Townsend Harris Medal. — Dr. Walter Timme, director of the neuroendocrinology department of the Neurological Institute of New York and professor of clinical neurology at Columbia University College of Physicians and Surgeons, received one of four Townsend Harris medals awarded at the sixty-third annual alumni dinner of City College in the Hotel Roosevelt, November 13. The medals are named after the founder of the college and are awarded annually. Dr. Timme graduated in the class of 1893. The citation accompanying the award acknowledged Dr. Timme's contributions to the field of endocrinology in which he is credited with being a pioneer and recognized his contribution to the art and science of healing as "teacher, hospital consultant and specialist in practice."

Grant to Study Psychiatric Needs of Rejected Service Men.—A one year grant has been allocated by the Commonwealth Fund to the New York City Mental Hygiene Committee, State Charities Aid Association, to study the psychiatric needs of men discharged from or rejected for military service. The professional staff for the project includes Dr. Solomon W. Ginsburg, psychiatrist, Mrs. Rae L. Weisman and Mrs. Bluma Swerdloff, psychiatric social workers, Ruth Valentine, psychologist, and Mr. and Mrs. Raymond Franzen, research consultants. A study of 500 each of psychiatric rejections and discharges will be made in order that an accurate picture may be obtained for recommendations to fill whatever needs may be determined, especially to find out how many persons in these groups need rehabilitative services which the community does not offer.

Dr. Bristol Named Executive Director of Hospital Council.—Dr. Leverett D. Bristol, New York, health director of the American Telephone and Telegraph Company since 1929, has been appointed executive director of the Hospital Council of Greater New York, effective December 1. The council is a community planning agency to coordinate and improve the hospital and health services of New York City and to plan the economic development of these services in relation to community needs. It is made up of about twenty leading voluntary and government health, hospital, medical, welfare and business organizations of the state and city and its work is carried on through a planning committee made up of representatives of member agencies. The council has a close working relationship with the United Hospital Fund of New York City. One of its immediate projects will be to develop and plan for the present and postwar periods for the organized care of the sick in greater New York. Dr. Bristol's offices will be at 370 Lexington Avenue, New York 17.

OHIO

Dr. Zinninger Named Acting Director of Surgery at Cincinnati.—Dr. Max M. Zinninger, associate professor of surgery, has been appointed acting director of the department of surgery at the University of Cincinnati College of Medicine. Dr. Zinninger graduated at Johns Hopkins University College of Medicine, Baltimore, in 1921 and has been at the University of Cincinnati since 1925 with the exception of 1928-1930, when he served as professor of surgery at the Peiping Union Medical College, Peking, China. A total of $296,773.33 has been given by friends of the late Dr. Mont R. Reid, professor of surgery at the time of his death, May 11, for the Mont Rogers Reid Memorial Fund.

TEXAS

Texas University News.—The staff of the University of Texas Medical Branch, Galveston, presented a special symposium on psychosomatic medicine before army personnel at Fort Crockett, Galveston, Camp Wallace and Ellington Field on October 28. The symposium included discussions of disorders of the gastroenteric system by Dr. Charles T. Stone, on effort syndrome by Dr. Edward H. Schwab, on neurosurgery by Dr. Samuel R. Snodgrass and on skin disorders by Dr. Chester N. Frazier, and special clinics were conducted by Drs. Jack R. Ewalt and Titus H. Harris.——Robert I. Wise, Ph.D., formerly director of the public health laboratory, Houston, has been named assistant professor of bacteriology at the school and Glenn Drager, Ph.D., formerly in the department of anatomy, West Virginia University School of Medicine, Morgantown, assistant professor of anatomy.

"Dr." McElroy Sentenced to Penitentiary. — "Dr." Archibald Leslie V. McElroy, who has been chief physician treating employees working on the Denison Dam Project, was sentenced on October 21 to three years in a government prison after he refused to produce proof of when he had attended Tulane University of Louisiana School of Medicine, New Orleans. McElroy had served an eighteen month sentence in Leavenworth after he pleaded guilty to prescribing narcotics without a license, it was stated. The challenge to McElroy's medical standing was made in the process of a hearing to revoke probation in a federal court narcotics sentence given him in 1940. McElroy is reported to have violated the conditions of his probation, principally failing to report to federal authorities. He had been located practicing at the dam after a search of many months. It was stated that McElroy had refused to reveal from what medical school he had graduated or where he had lived prior to 1941. Dr. Thomas J. Crowe, Dallas, secretary of the state board of medical examiners, stated that an exhaustive investigation had failed to produce any evidence showing that the man was a medical school graduate or had ever held a license to practice. Testimony indicated that a bona fide physician with the same name lived in Fort Worth until his death, implying that McElroy had assumed the identity of the dead physician, it is stated. McElroy is reported to have served in the U. S. Penitentiary at Fort Leavenworth and the Federal Correctional Institution, Texarkana. Available information indicates that McElroy has served a number of jail sentences and has been committed to various mental institutions. He has operated under a number of aliases, always claiming to be a graduate of Tulane University. Available data, however, state that his record from the time he was discharged from the U. S. Army in 1918 shows that he was not out of jails and penitentiaries long enough to have taken a medical degree. A number of bad check charges are also linked to his record.

VIRGINIA

State Medical Election.—Dr. Henry B. Mulholland, professor of the practice of medicine at the University of Virginia Department of Medicine, Charlottesville, was chosen president-elect of the Medical Society of Virginia at its annual meeting in Roanoke, October 26. Dr. Claude B. Bowyer, Stonega, was inducted into the presidency. New vice presidents are Drs. John O. Boyd, Roanoke, Henry A. Latane, Alexandria, and Nicholas G. Wilson, Norfolk. Miss Agnes V. Edwards, Richmond, was reelected executive secretary-treasurer. Richmond was chosen as the site of the 1944 annual session. The society recommended the abolishment of the office of coroner in all cities and counties of the state and suggested the substitution of a medical examiner system to be known as the state commission on postmortem examinations and to serve without compensation.

WISCONSIN

Pan American Health Day.—On November 18 Pan American Health Day was observed at the University of Wisconsin, Madison. Dr. Estenio Hormaeche, assistant director of the Institute of Infectious Diseases, Montevideo, and professor of bacteriology, University of Montevideo, spoke at the special program on "Etiology of Infantile Summer Diarrhea, with Special Reference to Salmonella Infection" and Dr. Alfredo Sordelli, director of the Argentina National Institute of Health, on "Diphtheria." Pan American Health Day in the United States is celebrated annually on December 2 by proclamation of the President of the United States in recognition of almost four decades of Pan American cooperation in the field of public health and as a stimulus to future endeavor.

Dearholt Day.—The fourth annual Dearholt Day was held in Milwaukee on November 15 and in Madison on November 16 in commemoration of the late Dr. Hoyt E. Dearholt's service to tuberculosis education. Dr. Eben J. Carey, dean of the Marquette University School of Medicine, Milwaukee, presided at the Milwaukee session, and guest speakers included Drs. John B. Barnwell, Ann Arbor, Mich., on "Contrasting Clinical Reactions to the Tubercle Bacillus" and "An Experience in the Control of Tuberculosis in a General Hospital" and Leroy U. Gardner, Saranac Lake, N. Y., "Silicosis and Its Relation to Tuberculosis" and "Tuberculosis in Industry." In Madison, Walter J. Meek, Ph.D., acting dean of the University of Wisconsin Medical School, presided over the program participated in by the same guest speakers.

GENERAL

Examinations in Dermatology and Syphilology.—The next examinations of the American Board of Dermatology and Syphilology will be held in Chicago, June 9-10, 1944. The written examination will be held in various large cities of the country, May 8. Applications, which must be filed before April 1, should be sent to the assistant secretary, Dr. George M. Lewis, 121 East 60th Street, New York.

Postwar Traffic Accident Committee Named.—The National Safety Council announced the formation of a special committee of authorities to study postwar traffic accident problems. The new group is called the postwar traffic safety planning committee of the street and highway traffic section of the National Safety Council. Kenneth B. Colman, president of the Seattle Safety Council and chairman of the war production transport commission of Seattle, is head of the committee.

Annual Appeal for Infantile Paralysis Funds.—On January 30 the President's birthday will again serve as a designated appeal for funds for the National Foundation for Infantile Paralysis. The annual appeal will run from January 14 to 31 with the President's birthday celebration climaxing the event. Local chapters of the National Foundation now cover 3,000 of the 3,070 counties of the United States. Half of the amount collected is returned to the counties and the other half is used by the National Foundation.

North Pacific Surgical Meeting.—The annual session of the North Pacific Surgical Association was held at the Hotel Vancouver, Vancouver, B. C., November 19-20. The Founder's Lectures were presented by Dr. Roscoe R. Graham, assistant professor of surgery at the University of Toronto Faculty of Medicine, Ontario, on "The Influence of Experimental Study on Clinical Practice in Intestinal Obstruction," "The Present Status of Surgical Procedures on the Biliary Tract" and "Surgical Therapy in Duodenal Ulcer."

Diabetic Identification Tags.—At the suggestion of the medical division of the U. S. Office of Civilian Defense, to prevent dangerous delay in diagnosis and proper treatment during unconsciousness or coma, Eli Lilly and Company, Indianapolis 6, in cooperation with the American Diabetes Association will provide metallic identification tags to be worn by diabetic patients or carried in the pocket, carrying the inscription "If Ill DIABETIC Call Physician." No advertising of any sort appears on the tags, which will be supplied to the medical profession on request.

Coyotes Carry Rabies Threat.—The threat of a rabies epidemic as serious as the disastrous outbreak in 1915 was indicated in a statement to the press, November 5, by Paul C. Quick, Portland, Ore., regional supervisor of the U. S. Fish and Wildlife Service. Mr. Quick stated that the coyotes are taking 20 per cent of all livestock in six western states, Oregon, Washington, Idaho, California, Nevada and Montana. Despite the seizure of 10,578 coyotes over a recent twelve month period, the animals probably are more numerous than at any time since the government control program started, Mr. Quick stated, in commenting on a survey of the cattle and sheep country of the six affected states.

Chemical Patents and Applications Available in Abstract Form.—The chemical patents and patent applications vested by the Alien Property Custodian have been abstracted by the Chicago Section, American Chemical Society, and are now being indexed by a committee of the Science and Technology Group, Special Libraries Association. Beginning in January 1944, these abstracts will be published in thirty-one classified indexed pamphlets, to be followed by a master index and a supplement of new abstracts. Medical men will be interested in the "Pharmaceuticals" class and in certain subclasses under "Foods," "Organic Reactions," "Organic Synthetics" and "Sanitary Chemistry." The prices, if demand is adequate to justify them, will be $1 for any booklet and $25 for all thirty-three booklets. The paper situation necessitates close adjustment of the printing to the known demand; orders should be placed not later than December 10 to make sure of receiving copies. Order blanks (already sent to all members of the American Chemical Society and of the Science-Technology Group, Special Libraries Association) may be had from the Alien Property Custodian, Field Building, Chicago 3.

Charles L. Mayer Award.—The National Science Fund of the National Academy of Science, 515 Madison Avenue, New York 22, announces that the closing date for the acceptance of manuscripts and published articles for the 1943 Charles L. Mayer prize will be January 15. The award will be made for an outstanding contribution to present day knowledge of factors affecting the growth of animal cells with particular reference to human cancer. Consideration will be given to contributions published during 1943 or in manuscript. The 1942 award went to Dr. Charles B. Huggins, professor of surgery (urology) at the University of Chicago School of Medicine, for his work on the endocrine control of prostatic cancer. The advisory committee in charge of recommendations for the 1943 Charles L. Mayer Award includes Dr. Alan Gregg, director for the medical sciences of the Rockefeller Foundation, New York; Dr. George H. Whipple, dean of the University of Rochester School of Medicine and Dentistry, Rochester, N. Y.; Dr. Peyton Rous, Rockefeller Institute for Medical Research, New York; Robert R. Williams, D.Sc., chemical director of the Bell Telephone Laboratories, New York, and Elihu Root Jr., LL.D., New York.

CANADA

Grant for Study on the Adrenal Cortex.—A grant of $50,000 over a five year period has been given to McGill University from Gelatin Products, Ltd., and Frank W. Horner, Ltd., to support research under the direction of Dr. Hans Selye, associate professor of histology. The research is directed specifically at improving bodily resistance to all types of strain to which members of the armed forces are subjected and centers around the adrenal cortex.

FOREIGN

New Chair of Human and Comparative Pathology.—W. H. Collins, Buckinghamshire, has given £100,000 to the Royal College of Surgeons of England, London, to be available immediately, to endow the department of pathology and create a chair of human and comparative pathology and provided for a similar bequest in his will to endow a department of anatomy and establish a chair of human and comparative anatomy. In a letter to the press, reported in *Science*, Mr. Collins acknowledged the injury to these departments by enemy action, stating that he considered the endowments essential to restore the units to their scientific position.

Medals Awarded.—The Royal Society has awarded its Copley Medal to Sir Joseph Barcroft, Cambridge, a fellow of the society, for his scientific work and particularly his own personal risk of death to increase the scientific knowledge of breathing. Sir Joseph once spent a week in a glass case to test the effects of insufficient oxygen; he tested prussic acid by remaining in a gas-filled chamber with a dog that died in less than a minute; before the war he tested the force of blast by sitting in air raid shelters while bombs were dropped close by. The Royal Society also awarded its Davy Medal to Ian M. Heilbron, Ph.D., Kensington, for his work in the production of penicillin and his contributions to the knowledge of organic chemistry. Dr. Heilbron is scientific adviser to the ministry of production and professor of organic chemistry at the Imperial College of Science and Technology.

Foreign Letters

LONDON

(From Our Regular Correspondent)

Oct. 16, 1943.

Improved Vital Statistics During War

The vital statistics report which has just been published for the year ended last March shows continued improvement over prewar figures, except for the two usual problems of war—venereal diseases and tuberculosis. Maternal and infant mortality rates and death rates among civilians were the lowest ever recorded in England and Wales. The incidence of infectious diseases was remarkably low, probably the best on record. But rising claims under national health insurance suggest the considerable increase in short illnesses which might be expected after more than three years of war.

The deaths in England and Wales in 1942, including noncivilian deaths and those due to enemy action, numbered 480,137. This was 55,043 less than in 1941. Among females the average rate was 6.84 deaths per thousand living, 8 per cent better than in any previous year, notwithstanding the inclusion of deaths from enemy action and the withdrawal of large numbers of healthy young women from the civilian population. Among civilian males the average rate was also the lowest ever recorded in spite of the considerable effect of selective recruitment. Mortality of children at the preschool ages of 1 to 5, which had declined 47 per cent between 1931 and 1939, showed a further improvement of 2 per cent in 1942; at the school ages of 5 to 15 the low level reached in 1939 was regained. Live births, which numbered 654,039, increased by 66,811 over the previous year. There was a natural increase of population amounting to 173,902, the birth rate of 15.8 per thousand being the highest since 1931.

In his comment the minister of health says that the nation's prodigious war effort has imposed a severe strain on the health of the people, which they have withstood with dogged determination and astonishing success. As far as we could, he said, we have been ready to meet any attack that disease might make. But the strains of war are progressive and their effect on health may be of long term nature. Certainly in the fifth year of the war, the minister stated, we must not relax our watchfulness or reduce our activity. Explanation of the improved vital statistics is difficult and complex, but one important factor may be pointed out; the disappearance of unemployment consequent on the colossal demand for labor in war industries and recruitment for the fighting forces.

St. Dunstan's and Blinded American Soldiers

The institution known as St. Dunstan's was founded to give occupational training to those blinded in the war of 1914-1918. Its twenty-eighth annual report shows that 339 men and women blinded in war service have been admitted in the present war. Of these, over 100 have recovered useful sight and returned to military or civil life. Of the remainder, 87 men and 7 women are acquiring normal sight and will later learn an occupation. Forty-one men and women have left and returned to their old jobs, while others have become trained telephonists or masseurs. Some are working in munitions or aircraft factories. Of the men blinded in the last war, 1,777 are still under St. Dunstan's care.

At a luncheon given by Brig. Gen. Paul R. Hawley, chief surgeon, European Theater of Operations, United States Army, Sir Ian Fraser, founder and chairman of St. Dunstan's, was the chief guest among a distinguished audience which included the United States ambassador, Mr. John G. Winant. Mr. Winant said "Britain has pointed the way in many fields of human betterment. But in no field have her achievements been more outstanding than in the work of St. Dunstan's. This work has removed from hearts that now number thousands the fear of blindness, which our guest of honor today once said is much greater than blindness itself." The chief surgeon told his audience, which also included Lieut. Gen. Jacob L. Devers, commanding general of American Forces in the European Theater of Operations, and Major Gen. John C. H. Lee, commanding general, United States Army Services of Supply in the European Theater, that it was "a high privilege for the United States Army to send its blinded soldiers to St. Dunstan's for a course of training before they returned to their own country."

BRAZIL

(From Our Regular Correspondent)

Oct. 20, 1943.

Plague in Northeastern Brazil

Plague is still an endemic disease in the northeastern section of Brazil (states of Ceará, Rio Grande do Norte, Parahiba, Pernambuco, Alagoas and Bahia), an important district from the standpoint of global war. Several hundred cases of human plague have been registered in this section of the country in the past few years (94 in 1940, 155 in 1941, 10 in 1942) and several more during the first months of the present year. In order to improve the control of this disease, Dr. Marcelo Silva and a few collaborators of the Plague Division of the National Department of Health have undertaken during the last three years careful epidemiologic and experimental studies, the conclusions of which have been recently published and are summarized here. The most important plague foci in this semiarid region are in the mountains (500 to 2,000 feet), and the temperature and humidity directly influence monthly and annual variations in the incidence of the disease. In the state of Ceará, which has a hot, dry climate, the morbidity and mortality rates are minimum (an average of 20 per cent of the cases are fatal). In this state human plague is closely associated with rain distribution, humidity being the main factor to awaken the activity of latent foci of the disease. Several hundred experimental inoculations to ascertain the sensibility of sylvatic rodents to plague have fully demonstrated that their susceptibility is equal to that of the guinea pig, if not higher. House rats are the main source of infection, the disease often being present in these animals in an atypical, mild form. In this dry climate the reactivation of foci which have been dormant for two to five years is not infrequent. Since this is much longer than the life span of the common flea, pulicides are of minor epidemiologic importance in the maintenance of chronic foci. Contrary to the information frequently given by common country people, epidemics are neither extensive nor intense among rural rodents. As a rule these epizootics are observed only in the areas of distribution of both kinds of rodents—the house rat, a normal carrier of Xenopsylla cheopis, and the wild rodent, the common parasites of which are not transmitters of plague, as extensive researches have proved. The limited extension of the infection among sylvatic rodents, confined to the region of their contact with domestic rats, and the short duration of epizootics in these rodents are probably due to an incomplete adaptation of Xenopsylla cheopis to such animals, owing perhaps to the hardness and dryness of their skin. It was necessary to ascertain the susceptibility of the domestic cat to plague, which has been done through numerous experiments which proved this animal to have a low sensibility. Using the digestive route exclusively, it has been impossible to infect this animal, although in some instances infection may apparently occur, as shown by visceral hyperemia, edema and hyperemia of the lymphoid organs and localized intestinal lesions which might have been produced by the endotoxic action of Pasteurella pestis. Only rarely does plague infection in the cat show the characteristic lesions commonly seen in rodents.

This can be accomplished by massive inoculation with infective material which breaks all the organic defenses of the animal. The most frequent instance is an ill defined morbid picture without the presence of Pasteurella pestis.

The authors present their personal contribution of two new methods of plague diagnosis—the intradermal reaction, which makes possible the epidemiologic retracing of the disease in stricken regions, and the direct inoculation of blood from the patient into the peritoneum of guinea pigs as a means of rapid presumptive diagnosis to indicate immediate prophylactic measures. The intradermal reaction has been performed with the help of an antigen prepared according the leprosy Mitsuda technic but using the satellite gland of a guinea pig transcutaneously inoculated with a regional strain of Pasteurella pestis. This method has given promising results, owing to its high specificity and sufficient sensitivity, but the number of cases discovered through its use is yet rather low (about 50). The blood diagnosis is based on the early bacteremia in human plague and on the fact that the guinea pig plague peritonitis obtained through the inoculation of blood is more frequent than that obtained through the parallel inoculation of bubo material. Twelve hours after the inoculation, a peritoneal puncture is performed, as suggested by Gottschlich.

Concerning the control measures, the authors do not recommend the routine, periodic blocking of the infected areas through poisoning, which they describe as expensive and of low relative efficiency. They much prefer generalized ratproofing of houses, fumigation of rat galleries with hydrocyanic gas, active immunization of the menaced population with a live vaccine, and the combined use of flame throwers and rat-hunting dogs.

Ectopic Pregnancy and Hysterosalpingography

To the works of Heuser concerning the use of hysterosalpingography in uncomplicated pregnancy Drs. Arnaldo de Morais and J. Rosado of Rio de Janeiro have now added experience in 10 cases of ectopic pregnancy. The hysterosalpingography is not an exploratory method for cases in which the ectopic pregnancy is complicated by rupture and hemorrhage and in which the condition causing the internal bleeding requires immediate intervention by the surgeon; but the method is valuable for confirmation of the diagnosis in those cases in which there is no rupture. In a recent paper Drs. de Morais and Rosado described the radiologic symptoms of ectopic pregnancy. They concluded that the test of Cotte, of great diagnostic value in gynecology, gains real importance in the radiologic study of ectopic pregnancy, revealing an atypical diffusion of the oil surrounding the tumor. The method is harmless and does not have the dangers of the Douglas puncture, biopsy of the endometrium, the peritoneoscopy and gynecologic pneumoroentgenography. The hysterosalpingography is indicated in cases of doubtful diagnosis of broken or complicated ectopic pregnancy, provided it is not accompanied by symptoms demanding urgent attention. It is also indicated in cases of normal pregnancy combined with some gynecologic disorder simulating ectopic pregnancy.

Pancreatic Diseases under Radiologic Examination

Radiologic examination of the pancreas is not indicated unless the indirect data it provides are of great scientific importance in exceptional conditions, it is pointed out in a paper published recently by Dr. Manoel Campanario in São Paulo. Enlargement of the pancreas due to several pathologic processes is accompanied by some functional alterations and also alterations in form and topography of adjoining organs, principally the stomach, duodenum and transverse colon. When rigorously interpreted, such alterations are partly the basis for radiologic study of the pancreas. After a succinct study of the anatomy of the pancreas, Dr. Campanario proceeds to analyze the alterations produced in adjoining organs by pancreatic tumors. Radiologic evidence of pancreatic tumors is described minutely. Under unusual circumstances, chronic pancreatitis may resemble pancreatic carcinoma; in such cases, differential diagnosis by radiology is impossible. Even after operation, such differential diagnosis is not always possible macroscopically. The pneumoperitoneum is not always of practical value in the radiologic examination of pancreatic tumors. On the other hand, the technic described by Engel and Lyshold is of great practical importance in the radiologic study of diseases of the pancreas. Cholecystography is useful in tumors of the pancreas. However, radiologists agree that in some cases of pancreatic tumor, principally incipient carcinomas, radiologic examination does not provide a clear diagnosis, while in other cases it is unquestionably of practical value.

Diagnosis of Leprosy

The painful sensitivity of hypochromic and achromic patches occasionally presented in suspected or known cases of leprosy can be determined with a needle. According to studies carried out by Drs. Marino Bechecli and Novo Pacheco of São Paulo, when the patches were anesthetic and of leprotic origin puncture did not cause appearance of the reflex and diffuse erythema representing the second stage of the Lewis triplex reaction observed when the skin is submitted to an irritation (Lewis's triplex reaction: third phase papula.) Afterward, continuing their investigation, the authors made the histamine tests on the same patches, and the same results were obtained: absence of reflex erythema in the dychromic leprotic patches and presence of reflex erythema in the bordering normal skin. (The reflex erythema is large and more persistent with histamine than with the puncture alone.) Simple needling alone caused the appearance of reflex erythema within vitiliginous patches. Thus the procedure may be applied in the differential diagnosis of leprotic maculae. The authors studied the mechanisms of cutaneous reaction produced by needling and the reasons for its importance in the diagnosis of leprosy. They concluded that the reflex erythema depends on the integrity of the sensory nerves fibers; if these are involved in leprosy the reflex does not appear. It is from this fact that the diagnostic importance of the histamine test and the simple puncture is derived. Because of verifications obtained in several cases, the authors believe that a simple needling is significant in diagnosing the leprotic nature of peripheral anesthesia; moreover, this is a simple subsidiary means that may be applied by the clinician.

Marriages

BELLFIELD ATCHESON, Appleton City, Mo., to Lieut. Genevieve LaBree at Camp Perry, Ohio, November 18.

MARGARET LILLIAN SAMPSON to Rev. Jarrett Wood Richardson Jr., both of Louisville, Ky., October 2.

WILLIAM OWEN ARNOLD to Miss Sarah Weaver, both of State Sanatorium, Ark., October 7.

JAMES ALAN READ, St. Louis, to Miss Peggy Westbrook at Paragould, Ark., October 10.

ROBERT ALLEN CLARK to Miss Jane E. Bancroft, both of Rochester, N. Y., November 6.

IRA MILTON MILLER to Miss Jennie S. Hardison, both of Yakima, Wash., October 2.

JAMES STEDMAN REYNOLDS to Miss Polly Ann Wolfe, both of Gary, Ind., October 20.

ROBERT ALBERT ARENS to Mrs. Rosella Humble, both of Chicago, November 2.

FRED EUGENE HAMLIN to Miss Helen Betelle, both of Roanoke, Va., October 9.

BENJAMIN F. ROACH, Midway, Ky., to Miss Ruth Slack at Atlanta, Ga., recently.

Deaths

George Adams Leland Jr. ✠ Brookline, Mass.; Harvard Medical School, Boston, 1911; associate in surgery at his alma mater; specialist certified by the American Board of Surgery and a member of the founders group; member of the American Surgical Association, New England Obstetrical and Gynecological Society, New England Surgical Society, American Society for the Control of Cancer, New England Cancer Society and the New England Roentgen Ray Society; fellow of the American College of Surgeons; commissioned a lieutenant in the medical reserve corps of the U. S. Army during World War I; assigned to Base Hospital number 6 in 1917, commissioned a captain in the medical reserve corps in 1918 and detailed to Base Hospital number 220 with rank of commanding officer; honorably discharged in 1919; decorated Officer d'Académie of Public Instruction and Fine Arts by the French government; consulting surgeon to the Addison Gilbert Hospital, Gloucester, Massachusetts Eye and Ear Infirmary, Boston, and the New Hampshire Memorial Hospital, Concord; visiting surgeon to the Collis P. Huntington Memorial Hospital, Massachusetts General Hospital and the Palmer Memorial Hospital, Boston, where he died September 22, aged 57, of coronary artery atherosclerosis.

Marshall Clinton, Bluff City, Tenn.; Niagara University Medical Department Buffalo 1895; professor of surgery, emeritus, at the University of Buffalo School of Medicine; member of the Medical Society of the State of New York, Association of Military Surgeons of the United States, American Surgical Association, Buffalo Academy of Medicine and the International Surgical Society; fellow of the American College of Surgeons; veteran of the Spanish-American War; served as assistant surgeon with the rank of captain, 65th Regiment, New York National Guard; during World War I, served as consulting surgeon with the 35th division, as chief surgical consultant of the First and Second Army of the American Expeditionary Forces and director of Buffalo Base Hospital number 23; commissioned a major in the medical reserve corps on June 12, 1917 and a lieutenant colonel on June 6, 1918; cited by General Pershing for exceptionally meritorious and conspicuous services; formerly consulting surgeon at the Children's Hospital and the Buffalo City Hospital, attending surgeon at the Buffalo General Hospital, the Sisters of Charity and Erie County hospitals, all of Buffalo; surgeon for the Pennsylvania Railroad; died September 3, aged 70, of coronary thrombosis.

Eugene Leroy Horger ✠ Columbia, S. C.; University of Maryland School of Medicine, Baltimore, 1914; associate in psychiatry at the Medical College of the State of South Carolina, Charleston; for three years lecturer on mental disorders at the University of South Carolina, Columbia; specialist certified by the American Board of Psychiatry and Neurology, Inc.; past president of the Columbia Medical Society; member of the Southern Psychiatric Association and the American Psychiatric Association; fellow of the American College of Physicians; a member of the medical advisory board of districts two and six during World War I; neuropsychiatric examiner at the South Carolina State Penitentiary; attending specialist in neuropsychiatry at the Veterans Administration Facility; clinical director and assistant superintendent of the South Carolina State Hospital; at one time director and vice president of the Columbia Rotary Club; formerly an associate editor of the *Journal of the South Carolina Medical Association;* a director of the Boys Scout Council and the Travelers' Aid; died suddenly October 22, aged 54, of coronary thrombosis.

August Stephen Astor Thomen ✠ New York; University and Bellevue Hospital Medical College, New York, 1918; attending physician to the allergy clinic, Cornell University and the New York Hospital from 1920 to 1927; director of the allergy clinic, New York University College of Medicine, from 1927 to 1935 and lecturer in medicine from 1925 to 1935; fellow of the New York Academy of Medicine; member of the Society for the Study of Asthma and Allied Conditions, American Association for the Advancement of Science, American Association for Adult Education; co-author of "Asthma and Hay Fever in Theory and Practice," 1931; author of "Hay Fever: A Study in Applied Botany," 1933; "Don't Believe It! Says the Doctor," 1935, and "Doctors Don't Believe It—Why Should You?" 1941; died suddenly September 11, aged 51, of heart disease.

Simeon Alphonse Daudelin, Worcester, Mass.; School of Medicine and Surgery of Montreal, Faculty of Medicine of the University of Laval at Montreal, Que., Canada, 1895; member of the Massachusetts Medical Society; in 1907 appointed by President Theodore Roosevelt as high commissioner and plenipotentiary from the United States to France for a period of six months; covering the Maritime Exposition; the French government conferred on him the decoration of the Legion of Honor; at one time medical inspector in the schools; formerly chairman of the city board of health and trustee of Worcester Public Library; on the staff and at one time trustee of the Belmont Hospital; died in the Hôpital Notre-Dame, Montreal, Que., Canada, August 28, aged 73, of cerebral hemorrhage.

Carl Barck ✠ St. Louis; Albert-Ludwigs-Universität Medizinische Fakultät, Freiburg, Baden, Germany, 1881; Affiliate Fellow of the American Medical Association; assistant professor of medicine at the University of Basel, Switzerland, 1881-1882; professor of ophthalmology at the Marion-Sims College of Medicine from 1891 to 1903; professor emeritus of ophthalmology since 1922, professor of ophthalmology from 1903 to 1922 and director of the department from 1911 to 1922, St. Louis University School of Medicine; on the staffs of St. Louis City, Lutheran and St. John's hospitals; died in Columbia, Mo., October 2, aged 86, of diabetes mellitus and gangrene.

William Truitt Godfrey ✠ Stamford, Conn.; Cornell University Medical College, New York, 1907; fellow of the American College of Surgeons; served as chairman of the board of education; a director of the First Stamford National Bank and Trust Company; formerly a member of Company C, Twelfth New York National Guard Regiment; veteran of the Spanish-American War; a member of the National Defense Council of the American Red Cross; physician in charge of the Tophassee Grange; on the consulting staff of St. Joseph's Hospital and on the surgical staff of the Stamford Hospital, where he died September 4, aged 71, of reticulum cell sarcoma.

Frederick Conrad Narr ✠ Kansas City, Mo.; University of Pennsylvania School of Medicine, Philadelphia, 1911; member of the American Association of Pathologists and Bacteriologists and the American Society of Clinical Pathologists; specialist certified by the American Board of Pathology, Inc.; technical director of the blood donor service, American Red Cross, in Kansas City; formerly assistant instructor in pathology at his alma mater; director of the William Volker Clinic and the laboratory of the Research Hospital, where he died September 2, aged 55, of adenocarcinoma of the rectum, neuritis and ulcerative colitis.

Stephen Charles Markley, Richmond, Ind.; Medical College of Ohio, Cincinnati, 1898; member of the Indiana State Medical Association; past president of the Wayne County Medical Society; formerly coroner of Wayne County; served with the American Expeditionary Forces in France during World War I; lieutenant colonel in the medical reserve corps of the U. S. Army not on active duty; served as president of the board of managers of the Smith-Esteb Memorial Hospital; president and for many years secretary of the staff of the Reid Memorial Hospital, where he died August 28, aged 70, of cerebral hemorrhage.

Dana Byron Dana ✠ Kewaunee, Wis.; Northwestern University Medical School, Chicago, 1910; served as a lieutenant in the medical corps of the U. S. Army during World War I; for many years acting assistant surgeon in the U. S. Public Health Service; Coast Guard physician; medical superintendent and part owner of the Dana and Witcpalek Hospital; surgeon for the Ann Arbor and Kewaunee, Green Bay and Western railroads; director of the Kewaunee Shipbuilding and Engineering Company and vice president of the Kewaunee Manufacturing Company; died suddenly September 19, aged 56, of coronary occlusion.

John Lanahan Dorsey ✠ Baltimore; Johns Hopkins University School of Medicine, Baltimore, 1918; specialist certified by the American Board of Internal Medicine; member of the Southern Medical Association; fellow of the American College of Physicians; captain in the medical corps of the U. S. Army during World War I; instructor in medicine at his alma mater; on the staffs of the Church Home and Infirmary, Hospital for Women, Union Memorial Hospital and the Johns Hopkins Hospital, where he died September 15, aged 49, following an operation for brain tumor.

Robert Abe Burns, Alabama City, Ala.; Vanderbilt University School of Medicine, Nashville, Tenn., 1901; member of the Medical Association of the State of Alabama; veteran of the Spanish-American War; cited for bravery in action by General Pershing during World War I; served in the Army of Occupation in Germany; formerly mayor of Alabama City, police commissioner of Gadsden, a member of the county jury

commission, chief medical adviser for the state prison and warden of Kilby Prison; died September 2, aged 76, of cerebral hemorrhage.

William Francis Beer, Salt Lake City; Columbian University Medical Department, Washington, D. C., 1892; member and an honorary president of the Utah State Medical Association; past president of the Salt Lake County Medical Society; major in the medical reserve corps of the U. S. Army not on active duty; served during World War I; in 1896 joined the Utah National Guard; formerly on the staff of Dr. W. H. Groves Latter-Day Saints Hospital; died in the Providence Hospital, Oakland, Calif., August 11, aged 76, of bronchopneumonia.

Rose Amanda Ralston Ackley, Warren, Ohio; Cleveland University of Medicine and Surgery, 1896; member of the Ohio State Medical Association; died in Saltsburg, Pa., September 25, aged 83.

Ross Uriah Adams ✠ Kalamazoo, Mich.; Detroit College of Medicine, 1907; served overseas during World War I; formerly county physician; died September 30, aged 60, of cerebral hemorrhage.

Charles Adler ✠ New York; University and Bellevue Hospital Medical College, New York, 1912; died in the Mount Sinai Hospital September 11, aged 68.

George William Anderson, Early, Iowa; State University of Iowa College of Homeopathic Medicine, Iowa City, 1901; for many years president of the Early Bank and of the school board; died in Spencer September 2, aged 71, of cerebral embolism.

Merchant Ellsworth Austin, Krotz Springs, La.; Bennett College of Eclectic Medicine and Surgery, Chicago, 1906; died September 20, aged 75, of heart disease.

Louis Dominic Bacigalupi, San Francisco; University of California Medical Department, San Francisco, 1896; necropsy surgeon of San Francisco from 1901 to 1905; on the staff of St. Francis Hospital; died September 17, aged 68, of bronchiogenic carcinoma.

George Silas Barksdale, Fernbank, Ala.; Memphis (Tenn.) Hospital Medical College, 1899; member of the Medical Association of the State of Alabama; president of the Lamar County Medical Society; examiner for several insurance companies; died September 18, aged 70.

Dempsey Barnes ✠ Asheboro, N. C.; Medical College of Virginia, Richmond, 1925; past president of the Randolph County Medical Society; served during World War I; member of the Randolph County School Board; part owner and medical director of the Barnes-Griffin Clinic; on the staff of the Randolph Hospital; died in the Duke Hospital, Durham, N. C., September 9, aged 46, of uremia and terminal nephritis.

Ruben B. Baugh, Polkville, Miss.; Memphis (Tenn.) Hospital Medical College, 1898; served at various times as health officer of Smith County; member of the county Selective Service System during World War I and recently; member of the staff of Scott County Hospital, Morton; died September 1, aged 65, of coronary occlusion.

Oscar R. Beard, Sharon, Tenn.; University of Louisville (Ky.) Medical Department, 1892; died September 11, aged 74, of coronary thrombosis.

Clinton G. Beckett, Danville, Ill.; Medical College of Indiana, Indianapolis, 1905; member of the Illinois State Medical Society; served during World War I; formerly on the staffs of various Veterans Administration facilities; died September 18, aged 68, of acute cardiac dilatation.

Harry Jacob Bell ✠ Dawson, Pa.; Medico-Chirurgical College of Philadelphia, 1892; fellow of the American College of Physicians; formerly state senator and coroner; served as examiner for several insurance companies; died in the Connellsville State Hospital September 30, aged 75.

Julius Samuel Berkman, Rochester, N. Y.; University of Buffalo School of Medicine, 1898; for many years physician at the Monroe County Penitentiary; died September 8, aged 67, of poison, self administered.

J. Morgan Berry, Leitchfield, Ky.; Vanderbilt University School of Medicine, Nashville, Tenn., 1882; died August 16, aged 83, of myocarditis.

Cheves Bevill, Waldron, Ark. (licensed in Arkansas in 1903); member of the Arkansas Medical Society; for many years served as a member of the state board of health; formerly mayor of Waldron and a member of the state legislature; died August 28, aged 94.

Thomas Eugene Bland, Shelbyville, Ky.; University of Louisville Medical Department, 1892; member of the Kentucky State Medical Association; formerly mayor of Shelbyville and member of the city council; died September 25, aged 79.

James F. Bohannon, Louisville, Ky.; Hospital College of Medicine, Louisville, 1897; died in the Methodist Deaconess Hospital September 10, aged 72.

Cord Bohling ✠ Sedalia, Mo.; Missouri Medical College, St. Louis, 1888; past president of the Pettis County Medical Society; at one time a representative in the General Assembly for Morgan County; on the staff of the John H. Bothwell Memorial Hospital; member of the chamber of commerce and a director of the Third National Bank; died September 11, aged 80.

Harold Lynn Bottomley ✠ Philadelphia; Temple University School of Medicine, Philadelphia, 1919; died August 25, aged 47, of acute coronary artery occlusion and hypertension.

Benjamin Isaac Brody, Detroit; Western Reserve University School of Medicine, Cleveland, 1913; died September 18, aged 57.

Benjamin Joseph Butler, East Providence, R. I.; University of Vermont College of Medicine, Burlington, 1903; served during World War I; died September 18, aged 69, of heart disease.

Roscoe William Cahill, Boise, Idaho; University of Oregon Medical School, Portland, 1913; served during World War I; major, medical corps, Army of the United States, not on active duty; chief, surgical service, Veterans Administration Facility, where he died September 1, aged 55, of coronary infarction.

Matthew Corbett, Chicago; College of Physicians and Surgeons of Chicago, 1890; member of the Illinois State Medical Society; died September 12, aged 80, of chronic myocarditis.

Benjamin Courshon, Sioux City, Iowa; Atlanta College of Physicians and Surgeons, 1901; member of the Iowa State Medical Society; for thirty-two years city physician; died September 13, aged 75, of uremia.

Phillip H. Dalby, Ramona, Okla.; Kansas City (Mo.) Medical College, 1898; died September 28, aged 90, of senility.

Otho Lee Dascombe ✠ Waltham, Mass.; Johns Hopkins University School of Medicine, Baltimore, 1905; served during World War I; on the staff of the Waltham Hospital, where he died September 26, aged 62, of Hodgkin's disease.

Albert Mitchell Dawson ✠ Bellingham, Wash.; University of Minnesota College of Medicine and Surgery, Minneapolis, 1905; died in St. Joseph's Hospital September 18, aged 71.

Arthur Clarence Devere, Austin, Texas; University of Vermont College of Medicine, Burlington, 1898; died September 14, aged 74, of heart disease.

John Richard Drake, Memphis, Tenn.; University of Louisville (Ky.) Medical Department, 1911; school physician for the Memphis and Shelby County Health Department; formerly police surgeon; served on the Mexican border as a captain of the First Tennessee Ambulance Company in 1916 and during World War I in France with the 166th ambulance company and the Rainbow Division; died September 21, aged 57, of cardiac embolus due to hypertension.

James F. Dundas, Minden City, Mich.; Western University Faculty of Medicine, London, Ont., Canada, 1899; on the advisory board, Hubbard Memorial Hospital, Bad Axe, where he died September 12, aged 75.

Walter Branham Emery, Atlanta, Ga.; Atlanta College of Physicians and Surgeons, 1899; member of the Medical Association of Georgia; past president and secretary of the Fulton County Medical Society; past president of the Georgia Urological Association; formerly clinical lecturer on genitourinary diseases at the Atlanta School of Medicine and associate professor of surgery (syphilology) at the Emory University School of Medicine; died in San Francisco September 7, aged 67, of peritonitis following an abdominal operation.

Henry Fisher, Philadelphia; Medico-Chirurgical College of Philadelphia, 1883; member of the Medical Society of the State of Pennsylvania; formerly professor of materia medica and pharmacology at the Temple University School of Medicine and the school of pharmacy; at one time professor of materia medica, botany and pharmacology and trustee at his alma mater; served on the staffs of the Medico-Chirurgical, Germantown and Temple University hospitals; died September 18, aged 86.

Patrick Henry Fleming ✠ St. Martinville, La.; Medical Department of Tulane University of Louisiana, New Orleans, 1911; served in the medical corps, U. S. Army, in France and Germany during World War I; formerly mayor of St. Martin-

ville; director of St. Martin Parish Health Unit; acting director of the Iberia Parish Health Unit; died in a New Iberia hospital September 29, aged 53.

Joseph Freston, Danville, Va.; College of Physicians and Surgeons, Baltimore, 1886; died September 9, aged 76.

Herbert Milton Friedlander ✠ Washington, Pa.; University of Cincinnati College of Medicine, 1928; member of the American Academy of Dermatology and Syphilology; on the staff of the Washington Hospital; died August 27, aged 42, of coronary thrombosis.

Thomas Douglas Joseph Gallagher, North Arlington, Va.; University of Pennsylvania Department of Medicine, Philadelphia, 1900; died August 4, aged 80, of senility.

William Melvin Gamble, Wetumpka, Ala.; Louisville (Ky.) Medical College, 1887; member of the Medical Association of the State of Alabama; past president of the Elmore County Medical Society; died August 31, aged 77.

Simon Sims Garrett, Duncan, Okla.; University of the South Medical Department, Sewanee, Tenn., 1907; member of the Oklahoma State Medical Association; county superintendent of public health; died August 9, aged 71, of pernicious anemia.

Andrew James Gifford, Alexandria, S. D.; State University of Iowa College of Medicine, Iowa City, 1901; member of the South Dakota State Medical Association; member of the city board of education for many years; health officer of Hanson County; formerly physician for the local draft board; died in the Methodist State Hospital, Mitchell, September 14, aged 72, of cirrhosis of the liver.

George Robert Gowen, Walla Walla, Wash.; Southwestern Homeopathic Medical College and Hospital, Louisville, Ky., 1909; specialist certified by the American Board of Otolaryngology; member of the Washington State Medical Association, American Academy of Ophthalmology and Otolaryngology and the Pacific Coast Oto-Ophthalmological Society; past president of the Walla Walla Valley Medical Society; on the staffs of the Walla Walla Sanitarium and Hospital and St. Mary's Hospital; died September 2, aged 61.

Otto Edward Haisch ✠ Dubuque, Iowa; Keokuk Medical College, College of Physicians and Surgeons, 1905; past president of the Dubuque County Medical Society; a member of the Selective Service System as examining physician for the Dubuque County board number 1; on the staffs of the Finley Hospital and St. Joseph Mercy Hospital, where he died September 23, aged 69, of coronary thrombosis.

Lieut. (jg) Ben R. Bronstein, (MC), U.S.N.R., 1915-1942

Ellwood Harlow ✠ New York; University and Bellevue Hospital Medical College, New York, 1899; formerly on the staffs of the Knapp Memorial Eye Hospital and the Vanderbilt Clinic; died September 22, aged 70, of heart disease.

Gaillard Hastings Healy, Bay City, Mich.; Michigan College of Medicine and Surgery, Detroit, 1897; member of the Michigan State Medical Society; associated with the Jones Clinic; chief internist at the Bay City Samaritan Hospital, where he died September 23, aged 66, of coronary thrombosis.

Noble J. Hill, Hindsville, Ark. (licensed in Arkansas in 1903); member of the Arkansas Medical Society; died September 1, aged 74.

Ferdinand Murdo Jeffries ✠ New York: Bellevue Hospital Medical College, New York, 1893; formerly professor of pathology and bacteriology at the New York Polyclinic Medical School and Hospital; formerly on the staff of the Hospital for Ruptured and Crippled; died in Pennington, N. J., September 4, aged 78, of heart disease.

George Boyden Jones ✠ Lieutenant Colonel, U. S. Army, retired, San Francisco; Medical College of Indiana, Indianapolis, 1892; veteran of the Spanish-American War, Philippine Insurrection and World War I; commissioned a major in the medical corps of the U. S. Army in 1920; retired for disability in line of duty with rank of lieutenant colonel in August 1931; died in the Letterman General Hospital September 1, aged 75, of cerebral hemorrhage, subacute bacterial endocarditis, Streptococcus viridans, and general arteriosclerosis.

Haig Haigouni Kasabach, New York; University of Michigan Medical School, Ann Arbor, 1926; assistant professor of radiology at the Columbia University College of Physicians and Surgeons; specialist certified by the American Board of Radiology, Inc.; member of the Medical Society of the State of New York, American Roentgen Ray Society, American College of Radiology and the American Radium Society; on the staffs of the Presbyterian Hospital and the Vanderbilt Clinic; died in the Neurological Institute, September 1, aged 44.

Frederick Carl Emil Kuhlmann ✠ Webster Groves, Mo.; Washington University School of Medicine, St. Louis, 1896; formerly a surgeon in the U. S. Public Health Service reserve; colonel, medical reserve corps, U. S. Army, not on active duty; died in the Evangelical Deaconess Home and Hospital, St. Louis, of injuries received in an automobile accident, September 26, aged 72.

Charles Edward Lewis ✠ Bell City, Mo.; National University of Arts and Sciences Medical Department, St. Louis, 1916; died in the Southeast Missouri Hospital, Cape Girardeau, August 17, aged 66, of acute cholecystitis with obstruction of the common duct and chronic nephritis.

Andrew J. Mitchell ✠ Sharon, Pa.; University of Pennsylvania Department of Medicine, Philadelphia, 1888; on the staff of the Christian H. Buhl Hospital; died August 22, aged 84, of coronary occlusion and arteriosclerosis.

Arthur W. Moore, Portland, Ore.; University of Vermont College of Medicine, Burlington, 1883; member of the Oregon State Medical Society; past president of the Multnomah County Medical Society; one of the first members on the staff of St. Vincent's Hospital; died in the Portland Sanitarium and Hospital August 25, aged 88, of strangulated right inguinal hernia and hypostatic pneumonia.

Esther Morgan, Williamsport, Pa.; Woman's Medical College of Pennsylvania, Philadelphia, 1906; for many years superintendent of the Dixie Hospital, Hampton, Va., and later pathologist at the North Hudson Hospital, Weehawken, N. J.; died October 18, aged 70, of carcinoma of the colon.

Ashley Bennett Palmer, Seattle; State University of Iowa College of Homeopathic Medicine, Iowa City, 1907; died in the Swedish Hospital August 15, aged 78, of myocarditis.

Charles Delmer Rilance ✠ Denver; McGill University Faculty of Medicine, Montreal, Que., Canada, 1906; served overseas during World War I; at one time superintendent of the Jeffrey Hale's Hospital, Quebec, Que., Canada; on the staff of the Presbyterian Hospital; associate physician at the Mercy Hospital; examining physician for local board number 2; died August 15, aged 62, of heart disease.

Frank John Walz, Wilkinsburg, Pa.; Jefferson Medical College of Philadelphia, 1896; member of the Medical Society of the State of Pennsylvania; died in the Hillsview Sanitarium, Washington, August 2, aged 72, of cerebral hemorrhage, hypertension and Parkinson's disease.

John Marion Whitfield, Panama City, Fla.; University of Alabama School of Medicine, 1908; member of the Florida Medical Association; served during World War I; died in the Veterans Administration Facility, Montgomery, Ala., August 15, aged 66, of brain tumor.

Fritz Carl Yeck, Meredosia, Ill.; Rush Medical College, Chicago, 1903; died August 11, aged 68.

KILLED IN ACTION

Ben Richard Bronstein, Manchester, N. H.; Tufts College Medical School, Boston, 1940: diplomate of the National Board of Medical Examiners; on the resident staff of the Elliot Hospital; lieutenant (jg), medical corps, U. S. Naval Reserve; a new vessel to be named in his honor, according to the Bureau of Medicine and Surgery; died as a result of the torpedoing of the U. S. S. *Jacob Jones* off Cape May, N. J., Feb. 28, 1942; aged 26; officially declared deceased by the Navy Department March 5, 1942.

Correspondence

"HOPE (FALSE) FOR THE VICTIMS OF ARTHRITIS"

To the Editor:—Paul de Kruif's enthusiastic article in this month's *Reader's Digest* entitled "Hope for the Victims of Arthritis" might better have been called "False Hope for the Victims of Arthritis."

Since its publication I have had many inquiries from all parts of the United States both from physicians and from patients with arthritis. Dr. de Kruif's paper concerns Ertron, a vitamin D preparation manufactured by the Nutrition Research Laboratories, Chicago, and reviews a report of Dr. R. Garfield Snyder, who for the past six years has conducted a study of this in various forms of arthritis.

The objection which I have to the article in the *Reader's Digest* is that it stimulates great hope in the minds of patients with arthritis for a therapeutic agent of uncertain, if of any, permanent value, which is quite expensive, and the manufacturers of which have carried on a most intensive advertising campaign while the preparation is still on trial.

Also it states that "The treatment is now also under test by Dr. Paul Magnuson at Chicago's Northwestern University, at Columbia University in New York under Dr. Ralph Boots, and by Dr. R. H. Freyberg at the University of Michigan. It is spreading rapidly into medical practice."

Dr. de Kruif did not ask either Dr. Freyberg's or my opinion regarding our results. Reports have already been published from Dr. Freyberg's clinic, as well as from our own, concerning Ertron. Dr. Freyberg is certainly unenthusiastic concerning its value (Freyberg, R. H.: Treatment of Arthritis with Vitamin and Endocrine Preparations: Emphasis of Their Limited Value, THE JOURNAL, Aug. 8, 1942, p. 1165). He states: "Of the many newer forms of treatment for chronic arthritis, one of the most highly advertised is treatment with massive doses of vitamin D. I know of no rationale for such therapy" and "Results of this entire study of vitamin D therapy are certainly far from impressive of great value in this form of treatment! It is beneficial in only a minority of cases, although in some instances significant improvement occurred which could be explained only by the effect of vitamin D or a coincidental natural improvement. In the majority of cases, improvement when it occurred was only symptomatic and temporary; seldom could the course of the disease be considered to be favorably altered. In view of these facts vitamin D in massive doses should not be used with a comfortable feeling that great benefit is certain to result."

Dr. Charles Ragan analyzed the results of Ertron treated rheumatoid arthritis patients in our clinic and gave these results as a discussion to Dr. Snyder's paper before the meeting of the American Rheumatism Association in June 1942 (*Ann. Int. Med.* **19**:128 [July] 1943). He stated: "At the Arthritis Clinic of the Presbyterian Hospital, New York, we had 31 cases. These patients were admittedly a difficult group of cases. . . . Eighteen of the patients developed some toxic manifestations, usually nausea and vomiting, which promptly cleared after cessation of the treatment. As far as improvement goes, we were struck by one feature of the drug, namely that 7 of the patients felt very much better. In only 1 patient could we see any objective signs of improvement. Seven showed a significant drop in sedimentation rate; 8 were probably improved but the result was not very striking. Sixteen showed no improvement at all. One remained well after he stopped the drug. The remainder relapsed immediately after the drug was discontinued."

Since 1942 we have continued this study with a very small group of patients who were unable to take gold therapy. We have relied for our treatment of rheumatoid arthritis on (1) general care of patient, (2) rest, (3) gold therapy, (4) transfusions, (5) physical therapy, (6) climate, (7) cod liver oil. In my opinion there is probably no difference between Ertron and any other high dosage vitamin D preparations. The therapeutic value of such preparations remains unproved. Some of the patients definitely felt better while taking it, but this can also be said of cod liver oil, which is much less expensive and which we have recommended in our clinic for a number of years.

Whatever action you wish to take regarding this matter will be satisfactory to me, provided it emphasizes the fact that I certainly do not recommend Ertron as a cure for rheumatoid arthritis.

RALPH H. BOOTS, M.D., New York.

To the Editor:—The article in the November 1943 issue of the *Reader's Digest* entitled "Hope for the Victims of Arthritis," by Paul de Kruif, has undoubtedly already been called to your attention. However, I am afraid that the average physician is not yet aware of the fact that the sales of vitamin D preparations to the layman have increased more than 500 per cent during the past few days. My experience as a pharmacist, which I took as premedical training, has made me fully realize the extreme danger that can be evolved from such liberal self medication without proper control.

Already I have encountered complaints of nausea and slight diarrhea from some of these patients who, without seeking the proper advice of their family physicians, have resorted to self medication with highly concentrated forms of vitamin D preparations.

It certainly seems advisable at present to forewarn the public of the possibility of hypervitaminosis D and its pathologic significance. The fact that the article stressed the product "Ertron" and not irradiated ergosterol seems, as one would expect, to have made only the impression of "vitamin D for arthritis" to the layman. This can readily be understood from the fact that several of the purchasers are illiterate, and word of mouth therapy has been indeed a headache to many a physician when the case finally reaches his attention.

The effect of erroneous interpretation of articles written for the layman by reputable authors who have, in their efforts to use simple language, neglected the accuracy of those articles has already been seen in the misuse of thyroid, benzedrine sulfate and the sulfonamide drugs. It would be highly advisable to place vitamin D concentrate forms on the "required prescription" list until the public has been made to understand the dangers involved from such self medication without consulting their family physician.

NATHAN ROBERT SACHS,
5916 Griswold Avenue,
Cleveland.

Medical Student, Ohio State University
College of Medicine.

DERMATITIS DUE TO HAIR LACQUER AND NAIL POLISH (LACQUER)

To the Editor:—Much interest has been aroused by the current reports of Dr. J. B. Howell and Dr. Stephan Epstein on dermatitis due to hair lacquer (THE JOURNAL, October 16) as well as by the communication of Dr. S. S. Greenbaum in which it was stated that a chemical analysis of the hair lacquer was being made. On communicating with Dr. Greenbaum I learned, as was to be expected, that a chemical study revealed little of real significance. Assuming that a complete analysis could be made, physical factors, such as the presence of a wetting agent, might be important in enhancing the sensitizing power of the causative ingredient. This is one of the important principles learned in studying dermatitis due to resin finished shorts and fabrics (Keil, Harry: *J. Allergy* **14**:477 [Sept.] 1943).

Howell cited an example of dual hypersensitivity to hair lacquer and nail polish (which is essentially a lacquer) and he quoted a similar case reported by Downing. I should like to discuss this subject on the basis of 19 cases of nail polish dermatitis as well as 1 instance of hair lacquer dermatitis seen by me in April 1943. In most of these cases, including the one due to hair lacquer, I was able to use patch tests with a wide variety of substances as well as with the resin that is the actual cause of nearly all instances of nail polish dermatitis as seen today.

Much has been erroneously surmised about the cause of nail polish dermatitis. The first important advance was made by Simon (Nail Polish Eczema, *South. M. J.* **36**:157 [Feb.] 1943), who recorded 7 examples of this condition in which hypersensitiveness to "formaldehyde sulfonamide resin" was present. At the time this paper was published I had just made tests in a case of this condition with a variety of resins; the only significant positive reaction had been produced by a specimen of melamine-formaldehyde resin. On reading Simon's paper I investigated the matter and discovered that my specimen of melamine-formaldehyde resin actually also contained some p-toluene sulfonamide formaldehyde resin. Thus, what seemed at first to be an interesting group reaction turned out to be a fairly specific positive reaction. I have now studied 19 cases of nail polish dermatitis from this point of view and, except for 1 instance, all have been found to show hypersensitiveness to p-toluene sulfonamide formaldehyde resin. Furthermore, I have been able to prove, without a direct chemical analysis, that this same resin exists in a particular straw hat lacquer, and one such example under my care is now pending before the workmen's compensation board for disability produced by contact with this substance. The subject may possibly assume even greater importance when it is realized that patients are being sensitized to a material derived in part from a compound that is chemically similar to sulfanilamide. There is no direct proof of this as yet, but it is interesting that, in 10 cases of nail polish dermatitis in which hypersensitiveness to p-toluene sulfonamide formaldehyde resin was present, hypersensitiveness also to p-toluene sulfonamide was present in 5. There are many other points of interest revealed by such studies with the patch test, but these will be discussed elsewhere.

In connection with my case of dermatitis due to hair lacquer I had the opportunity of patch testing this patient with a number of resins. While there were mild reactions to two varieties of nail polish, the negative responses to p-toluene sulfonamide formaldehyde resin and a straw lacquer known to contain this substance proved beyond doubt that this resin was not the cause of the dermatitis in this case. There were positive reactions to a "polymerized wood rosin" and to an alkyd resin as well as a mild reaction to a dibasic terpine resin. The chief point is that this patient was not hypersensitive to p-toluene sulfonamide formaldehyde resin, the principal cause by far of nail polish dermatitis as seen today. The patient was unable to ascertain the name of the manufacturer of the hair lacquer. An editorial in THE JOURNAL, October 9, refers to an unidentified "new gum" as having been incorporated in the hair lacquer, whereas Howell was told that there were two synthetic resins. It must be noted that the terms gum and resin refer to entirely different classes of substances, although these terms are sometimes used erroneously as synonymous names. I make this point because the toluene sulfonamide formaldehyde resin has been used in straw lacquers under the designation of a "gum." My suggestion is that patients with hair lacquer dermatitis be tested with p-toluene sulfonamide formaldehyde resin (20-30 per cent in acetone) in order to eliminate this substance as an etiologic factor in these instances. Should the test be positive, this would go far toward elucidating the nature of the cause.

Lacquers of numerous types are exceedingly important commercial materials, extensively used in the war effort. Their formulas are complex and often variable. In some instances patch testing will yield valuable clues but without the cooperation of the manufacturer it is wise to be cautious in drawing precise conclusions. What is true of one lacquer may not necessarily hold for another or even for another specimen of lacquer manufactured at some subsequent time by the same concern. Where dermatitis due to a product reaches epidemic proportions, the cause is likely to be found in one ingredient; but it must be remembered that with such complex materials other ingredients may prove to be the sensitizer in occasional instances. Moreover, physical factors may be present to explain the enhanced sensitizing power of such materials. The manufacturer should be fully familiar with the sensitizing potentialities of the substances incorporated in his product and of the product as a whole.

HARRY KEIL, M.D., New York.

SICKNESS, NOT HEALTH, INSURANCE

To the Editor:—Permit me to urge on you the merit of using wherever possible in the field of "social insurance" the term sickness insurance and avoiding the term health insurance.

In the November 6 issue of THE JOURNAL, page 634, in the Statement of General Policies by the Council on Medical Service and Public Relations, under item 4 is the following:

"The Council approves voluntary prepayment medical service under the control of the state and county medical societies in accordance with the principles adopted by the House of Delegates in 1938.

"The medical profession has always been strongly opposed to compulsory health insurance because (1). . . ."

It will add strength to our position and argument if we stick to the honest and correct term sickness insurance as used throughout the continental nations of Europe, meaning insurance to meet the cost of sickness (institutional or medical); sickness as an actuarially calculable hazard can be insured against so far as its cost (for diagnosis and treatment) and for indemnity purposes are concerned.

Health insurance was the name given to the English system as a political sales term by Lloyd George to catch the labor vote, befog the issue and give an appearance of having something more than or other than insurance to provide for care of sickness. Health is not an insurable risk, as has been pointed out by honest actuaries, because even a physician cannot contradict the person who says he or she is sick, at least not in a practical sense.

Health insurance as a political slogan is adopted by the dogooders, the social welfare promoters, the salesman of New Dealism and "social security."

If in all our arguments and public statements we bring the subject down to earth and speak of sickness insurance, we shall strengthen our position and reduce the loose talk of "health insurers" to absurdity.

We oppose compulsion but encourage the thrifty use of insurance to meet the hospital costs of sickness by voluntary plans. We encourage prepayment plans under medical auspices to meet the cost of professional services (preventive, diagnostic and therapeutic). These are voluntary sickness or medical service plans. They are not health insurance.

Pardon my insistence on the point with which I believe you entirely agree. In preparing to beat the Wagner-Murray-Dingell bill and similar legislation, we must tell the people that it compels them into sickness insurance and is in no honest respect a measure which will contribute to health promotion or protection.

HAVEN EMERSON, M.D., Minneapolis.

COMMENT.—The editor entirely agrees!—ED.

Medical Examinations and Licensure

COMING EXAMINATIONS AND MEETINGS

NATIONAL BOARD OF MEDICAL EXAMINERS EXAMINING BOARDS IN SPECIALTIES

Examinations of the National Board of Medical Examiners and Examining Boards in Specialties were published in THE JOURNAL, Nov. 20, page 789.

BOARDS OF MEDICAL EXAMINERS

ALABAMA: Montgomery, June 20-22. Sec., Dr. B. F. Austin, 519 Dexter Ave., Montgomery.

COLORADO: * Denver, Jan. 5-7. Sec., Dr. J. B. Davis, 831 Republic Bldg., Denver.

DELAWARE: *Written.* Dover, Jan. 11-13. *Endorsement.* Dover, Jan. 18. Sec., Medical Council of Delaware, Dr. Joseph S. McDaniel, 229 S. State St., Dover.

GEORGIA: Atlanta, Dec. 21-22. Sec., State Examining Boards, Mr. R. C. Coleman, 111 State Capitol, Atlanta.

IDAHO: Boise, Jan. 11. Dir., Bureau of Occupational Licenses, Mrs. Lela D. Painter, 355 State Capitol Bldg., Boise.

ILLINOIS: Chicago, Jan. 18-20. Supt. of Registration, Department of Registration and Education, Mr. Philip Harman, Springfield.

INDIANA: Indianapolis, May 2-4. Sec., Board of Medical Registration and Examination, Dr. W. C. Moore, 301 State House, Indianapolis.

IOWA: * Iowa City, Dec. 27-29. Dir., Division of Licensure and Registration, Mr. H. W. Grefe, Capitol Bldg., Des Moines.

KANSAS: Kansas City, Feb. 2-3. Sec., Board of Medical Registration and Examination, Dr. J. F. Hassig, 905 N. Seventh St., Kansas City.

KENTUCKY: Louisville, Dec. 6-8. Sec., State Board of Health, Dr. Philip E. Blackerby, 620 S. Third St., Louisville.

LOUISIANA: New Orleans, Dec. 21-23. Sec., Dr. R. B. Harrison, 1507 Hibernia Bank Bldg., New Orleans.

MARYLAND: *Medical.* Baltimore, Dec. 14-17. Sec., Dr. J. T. O'Mara, 1215 Cathedral St., Baltimore. *Homeopathic.* Baltimore, Dec. 14-15. Sec., Dr. J. A. Evans, 612 W. 40th St., Baltimore.

MINNESOTA: * Minneapolis, Dec. 20-22 and Jan. 18-20. Sec., Dr. J. F. DuBois, 230 Lowry Medical Arts Bldg., St. Paul.

MONTANA: Helena, April 3-5. Sec., Dr. O. G. Klein, First National Bank Bldg., Helena.

NEBRASKA: * Omaha, Dec. 2-23. Dir., Bureau of Examining Boards, Mr. Oscar F. Humble, 1009 State Capitol Bldg., Lincoln.

NEW HAMPSHIRE: Concord, March 9-10. Sec., Board of Registration in Medicine, Dr. D. G. Smith, State House, Concord.

NEW JERSEY: Feb. 15-16. Sec., Dr. E. S. Hallinger, 28 W. State St., Trenton.

NEW MEXICO: * Santa Fe, April 10-11. Sec., Dr. LeGrand Ward, 141 Palace Ave., Santa Fe.

NEW YORK: Albany, New York, Buffalo and Syracuse, Jan. 24-27. Sec., Dr. R. R. Hannon, Education Bldg., Albany.

NORTH CAROLINA: December. Sec., Dr. W. D. James, Hamlet.

NORTH DAKOTA: Grand Forks, Jan. 4-7. Sec., Dr. G. M. Williamson, 4½ S. Third St., Grand Forks.

OHIO: *Written.* Columbus, Dec. 13-15. Sec., Dr. H. M. Platter, 21 W. Broad St., Columbus.

OKLAHOMA: * Oklahoma City, Dec. 27-29. Sec., Dr. J. D. Osborn Jr., Frederick.

OREGON: Portland, Dec. 8-10. Sec., Miss L. M. Conlee, 608 Failing Bldg., Portland.

PENNSYLVANIA: Philadelphia and Pittsburgh, January. Act. Sec., Bureau of Professional Licensing, Department of Public Instruction, Mrs. Marguerite G. Steiner, 358 Education Bldg., Harrisburg.

RHODE ISLAND: * Providence, Dec. 1-2. Chief, Division of Examiners, Mr. Thomas B. Casey, 366 State Office Bldg., Providence.

SOUTH CAROLINA: Charleston, Dec. 20-22. Sec., Dr. N. B. Heyward, 1329 Blanding St., Columbia.

SOUTH DAKOTA: * Pierre, Jan. 18-19. Dir., Medical Licensure, State Board of Health, Dr. Gilbert Cottam, Pierre.

VERMONT: Burlington, Dec. 16-18. Sec., Dr. F. J. Lawliss, Richford.

VIRGINIA: Richmond, Dec. 14-17. Sec., Dr. J. W. Preston, 30½ Franklin Road, Roanoke.

WEST VIRGINIA: Charleston, Jan. 3-5. Commissioner, Public Health Council, Dr. John E. Offner, State Capitol, Charleston.

WISCONSIN: * Madison, Dec. 13-15. Sec., Dr. C. A. Dawson, Tremont Bldg., River Falls.

WYOMING: Cheyenne, Feb. 7-8. Sec., Dr. M. C. Keith, Capitol Bldg., Cheyenne.

* Basic Science Certificate required.

BOARDS OF EXAMINERS IN THE BASIC SCIENCES

ARIZONA: Tucson, Dec. 21. Sec., Dr. R. L. Nugent, Science Hall, University of Arizona, Tucson.

COLORADO: Denver, Dec. 8-9. Sec., Dr. E. B. Starks, 1459 Ogden St., Denver.

CONNECTICUT: Feb. 12. Address State Board of Healing Arts, 250 Church St., New Haven.

DISTRICT OF COLUMBIA: Washington, April 17-18. Sec., Commission on Licensure, Dr. G. C. Ruhland, 6150 E. Municipal Bldg., Washington.

IOWA: Des Moines, Jan. 11. Dir., Division of Licensure and Registration, Mr. H. W. Grefe, Capitol Bldg., Des Moines.

MINNESOTA: Minneapolis, Jan. 4-5. Sec., Dr. J. C. McKinley, 126 Millard Hall, University of Minnesota, Minneapolis.

NEBRASKA: Omaha, Jan. 11-12. Dir., Bureau of Examining Boards, Mr. Oscar F. Humble, 1009 State Capitol Bldg., Lincoln.

NEW MEXICO: Feb. 7. Sec., Miss Pia Joerger, State Capitol, Santa Fe.

OKLAHOMA: Oklahoma City, Nov. 29. Sec., Dr. J. D. Osborn Jr., Frederick.

SOUTH DAKOTA: Vermillion, December 3-4. Sec., Dr. G. M. Evans, Yankton.

TENNESSEE: Nashville and Memphis, Dec. 10-11. Sec., Dr. O. W. Hyman, 874 Union Ave., Memphis.

WISCONSIN: Milwaukee, Dec. 4. Sec., Prof. Robert N. Bauer, 152 W. Wisconsin Ave., Milwaukee.

Bureau of Legal Medicine and Legislation

MEDICOLEGAL ABSTRACTS

Medical Practice Acts: Revocation of License Issued Without Examination to Applicant Not Licensed Elsewhere.—Goldsmith emigrated from Germany to the United States in 1926, when he was 34 years old. Prior to his entry here "he had academic education and received advanced degrees." After arriving here "he studied for the medical profession and was engaged in medical research under practicing medical specialists and in connection with medical institutions." He attended the medical schools of New York, Yale and Columbia universities, failing "in his examinations" in New York and Yale. In 1932 he became a citizen of the United States and thereafter went abroad, attending the medical school of the German University of Prague, Czechoslovakia, which, according to the reported opinion, "is one of excellent standing" and from which he received the degree of doctor of medicine in 1937. He did not, however, receive a license to practice in Czechoslovakia. He then returned to the United States and in 1938 moved to New Hampshire, where he was licensed without examination to practice medicine under the provisions of New Hampshire medical practice act, which authorizes the issuance of a license without examination to a person

"legally qualified to treat human ailments or practice medicine in any state or country whose requirements the board deems equal to those in this state. . . ." (Public Laws, 1926, C. 204, §13).

Later, acting in apparent reliance on another section of the medical practice act, which authorizes the revocation of a license obtained "by fraudulent means," the board of medical examiners of New Hampshire, after notice and hearing, revoked Goldsmith's license, finding that (1) Goldsmith had obtained his license "by deliberately and fraudulently misleading the board with respect to his full medical qualifications" and (2) if it "had known at the time of application what it knows now about his medical scholarship and experiences as a result of the evidence in this case, it would not have granted" him a license without examination. Goldsmith then instituted before the superior court, Merrimack County, N. H., proceedings for certiorari. The superior court transferred to the Supreme Court of New Hampshire, Merrimack, without ruling, certain questions involved in the proceedings.

The application for a license without examination, it was charged, filed by Goldsmith was fraudulent because (1) Goldsmith failed in filling out a portion of the application entitled "Medical Education" to make reference to the fact that he had attended New York and Yale universities and had failed in examinations in their respective medical schools; and (2) Gold-

smith had stated in the application that he had been "examined and licensed" in Czechoslovakia, when in fact no license had there been issued to him. In determining whether or not Goldsmith's license was obtained by fraudulent means, said the Supreme Court, we must bear in mind that the medical practice act in this connection requires the fraud to be causal. If fraud was practiced but was of no efficiency in obtaining the license, a condition of the statute for revocation of the license was not met. The court did not believe that there was any evidence before the board on which there could be based a reasonable conclusion of causal fraud in obtaining the license.

With respect to the charge that Goldsmith's application was fraudulent because of the statement that he had been examined and licensed in Czechoslovakia, continued the court, the only pertinent evidence before the board was that a degree in medicine obtained at Prague conferred on citizens of Czechoslovakia the legal right to a license to practice in that country, and that because Goldsmith was not a citizen of Czechoslovakia a special permit was needed, as a formality, and with no question of his medical qualification, but Goldsmith never applied for that special permit. Goldsmith's application for a license in New Hampshire and an appendix accompanying it as a certified translation of various documents disclose that Goldsmith's statement in the application of having been licensed was clearly qualified by setting forth the fact that no license had been issued and the reason why. One requirement of the application was to furnish a "Certified Copy of State or National Board License or Certificate." Goldsmith wrote after this item "is enclosed, translation." The translation of the document which conferred the degree of doctor of medicine on Goldsmith contained the following:

> Being an alien, the holder renounces the right to practice medicine within the territory of the Czechoslovakian Republic. He is not entitled to practice medicine in said territory unless he secure a special permit to practice medicine in accordance with section 6 of the law as of June 28, 1929.

Goldsmith's failure to furnish a certified copy of a foreign license was self evident and the reason for the failure definitely explained. The application and appendix thus showed the inaccuracy, considered alone by itself, of the statement of having been licensed, and the statement of the facts amounted fairly to a correction of the inaccuracy. An intent to mislead by the statement of having been licensed cannot fairly be found, and this charge of fraud must be rejected as a basis for revoking the license.

With respect to the charge of fraud in that Goldsmith failed to state the fact that he had failed in examinations in New York and Yale universities, said the court, if it can be found that Goldsmith intended to mislead the board by that omission the conclusion that the board was in fact misled is altogether problematic. The omission fairly could be only of minor significance. The failures in examinations could only negligibly detract from his subsequent record as a student and from his experience in research work. The failures occurred early in his study of medicine and within four years after his emigration to this country. If not altogether negative in their bearing on his educational fitness to practice, his later studentship for a period of four or five years, and his incidental research work throughout his course of preparation, were subjected to no criticism.

The court believed that much irrelevant evidence was received at the hearings, such as evidence relating to Goldsmith's skill and conduct in the practice of his profession since his licensing. This evidence, said the court, was apparently received as having some bearing on the charge of fraud in the application, but it could have had none on the question of the causal quality of the alleged fraud. The only charge on which the revocation could be based is of fraudulent means in obtaining the license. The success of the means, which related only to scholarship, could not, under any test of logical relevancy, be proved by evidence of insufficiency of attainments in skill and ethics revealed after the issue of the license.

While the board of medical examiners, said the court, is a body of experts, the issue of causal fraud is to be resolved as an ordinary question of fact with no application of expert or special knowledge. Evidence from which a rational inference sufficient to warrant a finding of probability rather than of mere possibility was required. Evidence to have probative value must be relevant under principles of logic to support a conclusion drawn from it. As no sufficient evidence was presented to establish causal fraud, the order of revocation on the ground of fraud was not rightfully made.

The court concluded, however, that the board should not be compelled to restore a license to Goldsmith. If Goldsmith, said the court, was not "legally qualified" to practice medicine in some other state or country under the standard required by the medical practice act, the board was without power in the first instance to license him without examination and if it did so it acted ultra vires. If the original license was granted to Goldsmith without authority, it was void, and no injustice is done to Goldsmith by its revocation on other grounds. It therefore becomes decisive to construe the words "legally qualified" as they appear in the New Hampshire medical practice act. The applicable Czechoslovakian law does not permit the issue of a license to a foreigner unless there was a treaty between the country of which he was a citizen and Czechoslovakia relating to the rights of the nationals of either country to practice medicine in the other country. The court then quoted from a letter written by Cordell Hull, secretary of state, dated May 27, 1943 to the effect that there was not in force nor had there ever been in force between the United States and Czechoslovakia any treaty containing provisions relating to the rights of the nationals of either country to practice medicine in the other country. If, said the court, it might be held that the requirement that an applicant be legally qualified to practice elsewhere is not so insistent as to call for literal compliance with details of merely formal and ministerial observance, so that legal qualification to practice elsewhere may fall short of actual permission to practice there, yet here the lack of a treaty creates an absolute legal disqualification. Although the plaintiff was professionally qualified to practice in Czechoslovakia, and hence in this state, in the absence of a treaty it was illegal for him to practice there, and utter illegality or lack of legal right is not within full legal qualification. To be "legally qualified," under a fair construction of the medical practice act, one must have at least a substantive and practical right in addition to the possession of professional attainment, otherwise the word "legally" would be surplusage. Equivalence of professional standards is not enough. An insurmountable bar of the right to practice in Czechoslovakia existing, Goldsmith is barred from a license here without successfully passing an examination. No conditions on which he may practice there have been established. An essential condition of legality without examination is missing.

Accordingly, the court, in effect, refused to set aside the order of the board revoking Goldsmith's license to practice.—*Goldsmith v. Kingsford, 32 A. (2d) 810 (N. H., 1943).*

Society Proceedings

COMING MEETINGS

American Society of Anesthetists, New York, Dec. 9. Dr. McKinnie L. Phelps, 745 Fifth Ave., New York 22, Acting Secretary.

Annual Forum on Allergy, St. Louis, Jan. 22-23. Dr. Jonathan Forman, 394 East Town St., Columbus, Ohio.

Association for Research in Nervous and Mental Diseases, New York, Dec. 17-18. Dr. Thomas E. Bamford Jr., 115 East 82d St., New York 28, Secretary.

Eastern Section, American Federation for Clinical Research, New York, Dec. 4. Dr. Charles H. Wheeler, 345 East 68th St., New York, Acting Secretary.

Seaboard Medical Association, Richmond, Va., Nov. 30-Dec. 2. Dr. Clarence P. Jones, 3117 West Avenue, Newport News, Va., Secretary.

Society for the Study of Asthma and Allied Conditions, New York, Dec. 4. Dr. W. C. Spain, 116 East 53d St., New York, Secretary.

Southern Surgical Association, New Orleans, Dec. 7-9. Dr. Alton Ochsner, 1430 Tulane Ave., New Orleans, Secretary.

Current Medical Literature

AMERICAN

The Association library lends periodicals to members of the Association and to individual subscribers in continental United States and Canada for a period of three days. Three journals may be borrowed at a time. Periodicals are available from 1933 to date. Requests for issues of earlier date cannot be filled. Requests should be accompanied by stamps to cover postage (6 cents if one and 18 cents if three periodicals are requested). Periodicals published by the American Medical Association are not available for lending but can be supplied on purchase order. Reprints as a rule are the property of authors and can be obtained for permanent possession only from them.

Titles marked with an asterisk (*) are abstracted below.

American Heart Journal, St. Louis

26:291-434 (Sept.) 1943

Absence of Conspicuous Increments of Venous Pressure After Severe Damage to Right Ventricle of Dog, with Discussion of Relation Between Clinical Congestive Failure and Heart Disease. I. Starr, W. A. Jeffers and R. H. Meade Jr.—p. 291.

*Tetralogy of Fallot. I. Feigin and J. Rosenthal.—p. 302.

Myocardial Infarction Indicated by Electrocardiographic Pattern in Which T_1 is Lower than T_3: Report of 45 Cases. W. Dressler.—p. 313.

Effects of Various Sulfonamide Drugs on Electrocardiogram of Dog. Roberta Hafkesbring, Esther M. Greisheimer and Grace E. Wertenberger.—p. 333.

Basal Weight Level in Treatment of Congestive Heart Failure. J. I. Goodman and J. F. Corsaro.—p. 338.

Bicuspid Aortic Valves and Bacterial Endocarditis. S. Koletsky.—p. 343.

Tilting Ballistocardiograph. R. W. Wilkins.—p. 351.

Comparison of Value of Weltmann Reaction and Erythrocyte Sedimentation Rate in Patients with Rheumatic Heart Disease. S. Scherlis and D. S. Levy.—p. 355.

Roentgenologic and Electrocardiographic Changes in Normal Heart During Pregnancy. A. G. Hollander and J. H. Crawford.—p. 364.

Effect of Trichlorethylene on Human, Canine and Rabbit Electrocardiogram. J. F. Mallach, G. H. Marquardt and S. C. Werch.—p. 377.

Tumors of Heart, with Report of Primary Fibromyxosarcoma of Left Auricle and Pulmonary Vein Associated with Multiple Tumors of Mesentery and Alimentary Tract. J. M. Ravid and J. Sachs.—p. 385.

*Significance of Vascular Hyperreaction as Measured by Cold Pressor Test: Observations on 200 Normal Subjects over Age of 40. H. I. Russek.—p. 398.

Tetralogy of Fallot.—Feigin and Rosenthal present histories of 2 patients in whom at necropsy there were changes in the heart which constitute the tetralogy of Fallot, namely right ventricular hypertrophy, pulmonic stenosis, interventricular septal defect and dextroposition of the aorta. The patients were 53 and 43 years of age, respectively. These cases are unusual particularly because of the long period of survival. In both there were factors which tended to alleviate the serious functional changes. These factors may explain, in part, the unusual longevity of both patients. The first patient is believed to have had originally an Eisenmenger complex, which differs from the tetralogy of Fallot only in the absence of pulmonic stenosis. Rheumatic pulmonic valvulitis acquired some time after the age of 37 years resulted in pulmonic stenosis, completing the tetralogy and contributing greatly to his disability and death. The second patient had the true tetralogy from birth. The presence of patency of the ductus arteriosus and, later, of systemic hypertension may have helped alleviate the cardiodynamic derangement and contributed to her longevity.

Vascular Hyperreaction and Cold Pressor Test.—Russek's observations on 200 normal male subjects over the age of 40 years fail to support the idea that "vascular hyperreactivity" is a significant factor in the development of essential hypertension. The subject remained recumbent in a quiet room, and blood pressure readings were taken until a basal level was reached. The rest period was twenty to thirty minutes, and usually four to five readings were made. The sphygmomanometer cuff remained on the arm during the whole procedure, and when the lowest level of blood pressure was reached the free hand was placed in a basin of water at a temperature of 4 C. The hand was kept immersed to a level just above the wrist for sixty seconds. The blood pressure was measured at thirty and sixty seconds. The response was recorded as the difference between the basal level and the maximum reading. Subjects whose response exceeded 20 mm. systolic and 15 mm. diastolic were called hyperreactors. Those whose response did not exceed these figures were designated as hyporeactors. Forty-one per cent of the entire group were hyperreactors. The incidence of hyperresponse increased with advancing age. The average response of both hyporeactors and hyperreactors increased with age; consequently a hyporeactor at 40 years might become a hyperreactor at 60 years. The increased response was attributed to changes in the threshold for pain and increasing vasomotor lability with succeeding decades. There is no support for the view that the cold pressor response is characteristic for the individual throughout life. The combined incidence of hyperresponse and hypertension in the subjects 60 to 69 years of age was almost three times the incidence of hyperresponse in the school children observed by Hines. There was no relationship between hyperresponse and a positive family history of hypertensive cardiovascular disease. Hyperresponse among normal subjects in the later decades of life is unrelated to essential hypertension.

American J. Obstetrics and Gynecology, St. Louis

46:333-478 (Sept.) 1943. **Partial Index**

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Fibroids in Pregnancy. J. H. Randall and L. D. Odell.—p. 349.

Effect of Pregnancy and Puerperium on Thiamine Status of Women. Helen S. Lockhart, S. Kirkwood and R. S. Harris.—p. 358.

Hemorrhage as Most Important Cause of Maternal Death. C. A. Gordon.—p. 366.

Influence of Pregnancy on Location of Center of Gravity, Postural Stability and Body Alinement. E. Corinne Fries and F. A. Hellebrandt.—p. 374.

Significance of Erythrocyte Sedimentation Rate in Pelvic Pathology. Katherine Y. Y. Li.—p. 381.

Pregnancy and Double Uterus. H. C. Taylor.—p. 388.

Observations on Elderly Primigravida. H. W. Erving and H. A. Power.—p. 395.

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Uterine Contraction Pattern of False Labor and Its Relation to Premature Labor: Study of 16 Patients with Lóránd Tocograph. D. P. Murphy.—p. 408.

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Caudal Anesthesia in 160 Obstetric Cases. V. Parrett.—p. 417.

Use of Endocervical and Endometrial Smears in Diagnosis of Cancer and of Other Conditions of Uterus. G. N. Papanicolaou and A. A. Marchetti.—p. 421.

Method of Obtaining Endometrial Smears for Study of Their Cellular Content. W. H. Cary.—p. 422.

Use of Precoital Douche in Cases of Infertility of Long Duration. J. MacLeod and R. S. Hotchkiss.—p. 424.

Clinical Effects of Synthetic Estrogen Hexestrol. R. C. McElroy, E. G. Snyder and J. H. Clark.—p. 446.

Vulvovaginal Mycosis. F. S. Rogers.—p. 450.

American Journal of Ophthalmology, Cincinnati

26:901-1010 (Sept.) 1943

Eye Manifestations of Xeroderma Pigmentosum. A. B. Reese and I. E. Wilber.—p. 901.

American Board of Ophthalmology Learns About Written Examinations. S. J. Beach.—p. 911.

Use of Vasodilators in Acute Fundus Disease. F. C. Cordes.—p. 916.

Roentgenography of Exophthalmos with Notes on Roentgen Ray in Ophthalmology. R. L. Pfeiffer.—p. 928.

Reply to Certain Criticisms of Aniseikonia. W. B. Lancaster.—p. 943.

*Pigmentary Degeneration of Retina and Nerve Type of Deafness. W. A. Sirles and H. Slaughter.—p. 961.

Convergence Tests. J. I. Pascal.—p. 967.

Case of Congenital High Myopia with Fundus Changes. H. Elwyn and W. S. Knighton.—p. 969.

Pigmentary Degeneration of Retina and Nerve Type of Deafness.—Sirles and Slaughter report 12 cases of retinitis pigmentosa. The patients were examined both subjectively and objectively and were considered to have typical cases of this disease. A careful otolaryngologic history was obtained and thorough examinations were made, including audiograms, of all patients. Of the 12 patients 6 were deaf as shown by audiograms and showed the typical nerve type of deafness. Only 4 of these gave a history of hearing impairment. Three of the 4 patients who gave a history of deafness had noticed this symptom from two to twenty-eight years before they noticed any eye symptoms. It is suggested that a common germplasm defect is present in the anlage of the inner ear and the retina.

Am. J. Syphilis, Gonorrhea and Ven. Dis., St. Louis

27:525-656 (Sept.) 1943

*Penicillin Sodium in Treatment of Sulfonamide Resistant Gonorrhea in Men: Preliminary Report. J. F. Mahoney, C. Ferguson, M. Buchholtz and C. J. Van Slyke.—p. 525.
Syphilis of Liver. R. D. Hahn.—p. 529.
*Chemotherapeutic Prophylaxis with Sulfonamide Drugs: II. The Effect of Small Doses of Sulfathiazole or Sulfadiazine on the Mental Efficiency and Hand-Eye Coordination. F. W. Reynolds and G. W. Shaffer.—p. 563.
Concurrent Use of Sulfathiazole and Hot Baths in Treatment of Sulfathiazole Resistant Case of Gonococcal Infection: Suggestion for Armed Services. N. Jones and S. L. Warren.—p. 572.
Problems in Epidemiology of Venereal Disease in Wartime. T. Rosenthal.—p. 581.
Chemotherapy of Experimental Lymphogranuloma Venereum in Mice. F. T. Callomon and H. Brown.—p. 590.
*Sulfadiazine and Sulfathiazole Therapy in Lymphogranuloma Venereum and Chancroid: Report of 30 Cases. R. O. Noojin, J. L. Callaway and W. Schulze.—p. 601.
Gonorrhea from Standpoint of Army. E. B. Howard.—p. 607.
Postural Hypotension in Tabes Dorsalis: Case Report. A. C. Woofter and A. V. Deibert.—p. 616.
Quantitative Complement Fixation Test for Syphilis in Malaria Treated Syphilis: Effect of Diluent. J. R. Dorgeloh.—p. 623.
Unusually High Icterus Index in Patient with Fatal Hepatic Necrosis Following Mapharsen: Case Report. W. I. Gefter, D. Turnoff and T. G. Schnabel.—p. 629.

Penicillin Sodium in Sulfonamide Resistant Gonorrhea.—Mahoney and his collaborators employed penicillin sodium therapy for 75 male patients hospitalized for sulfonamide resistant gonorrhea. All patients displayed evidence of purulent or mucopurulent urethritis, and Neisseria gonorrhoeae was demonstrated by both smear and culture methods. With one exception all patients had failed to respond to sulfonamide therapy. The routine therapy covered a period of forty-five hours and consisted of an intramuscular injection of 10,000 Florey units of penicillin sodium every three hours, night and day. The site of injection was the gluteal muscles. Distilled water 2 cc. for each 10,000 units was used as the solvent. A 22 gage needle 1½ inches in length was employed. The diagnosis of gonorrhea was established by smear and culture and the identification of Neisseria gonorrhoeae confirmed by the characteristic sugar fermentation reactions. The term "cure" was used to mean freedom from all clinical evidence of infection and negative smear and culture findings in secretions collected on at least three different days following the completion of treatment. On this basis 74 of the 75 patients responded in a satisfactory manner and 1 was a therapeutic failure. This patient has been retreated without evidence of sensitization. Additional observations indicate that a treatment period of fifteen hours, with an appreciable reduction in the total amount of the drug, may be found effective.

Effect of Sulfonamides on Mental Efficiency and Hand-Eye Coordination.—Reynolds and Shaffer point out that the widespread use of small doses of sulfonamide drugs as chemotherapeutic agents for the prevention of venereal infections (gonorrhea, chancroid and lymphogranuloma venereum), especially by the armed forces, makes desirable some information as to the effect of these drugs on the physiologic and psychologic processes on which fighting efficiency depends. A study was undertaken to determine what effects sulfathiazole and sulfadiazine have on mental efficiency and on hand to eye coordination. There were two groups of subjects for this study: (A) a group of 24 army medical officers and (B) a group of 49 university senior students. In each group, preliminary examinations were made in order to establish a base line. Sulfathiazole or sulfadiazine was administered in divided doses over a twenty-four hour period and the same tests repeated six hours and (in group B only) thirty hours after the last dose of the drug had been given. Half of the subjects in group A received a total of 6 Gm. of sulfathiazole each, the other half receiving inert placebos similar in appearance to sulfathiazole tablets. In group B each of 19 subjects received 4 Gm. of sulfathiazole, 20 subjects received 4 Gm. of sulfadiazine and 10 were given inert placebos. Comparison of the sulfonamide treated groups with the controls reveals no statistically valid change in mental efficiency or hand to eye coordination following either drug. A few subjects receiving sulfathiazole appeared to have an idiosyncrasy to the drug, since their performance was notably below that of all others. None of the subjects who were given sulfadiazine showed such an idiosyncrasy.

Sulfadiazine and Sulfathiazole in Lymphogranuloma Venereum and Chancroid.—The report by Noojin and his collaborators concerns treatment of 10 patients with lymphogranuloma venereum, 10 patients with chancroid and 10 patients with lymphogranuloma venereum and/or chancroid. Half of each group were treated with sulfadiazine and half were treated with sulfathiazole. Six Gm. of the respective drugs were given the first day and 3 Gm. daily thereafter for twenty days, or a total of 66 Gm. The clinical results with both drugs were good. They seemed to be equally efficacious. In all patients the Frei and Ducrey tests were unaltered at the end of the treatment period and were unchanged in 11 patients seen six months later. Sulfadiazine or sulfathiazole therapy prevented lymph node suppuration and drainage where this had not already occurred. Only 1 patient out of 30 had to stop work because of a toxic drug reaction. Nevertheless leukocyte count and hemoglobin determinations on peripheral blood and urinalysis should be done every three or four days regardless of the sulfonamide used. Since drug reactions, particularly nausea, are more common with sulfathiazole than with sulfadiazine, the latter is the drug of choice.

American Review of Tuberculosis, New York

48:131-204 (Sept.) 1943

Tuberculous Infection in People Dying of Causes Other Than Tuberculosis. H. C. Sweany, S. A. Levinson and A. M. S. Stadnichenko.—p. 131.
Action of Artificial Gastric Juice and Duodenal Secretions on Tubercle Bacilli. C. Floyd and C. G. Page.—p. 174.
Experimental Tuberculous Pleural Effusion: Causal Relationship of Tubercle Bacilli and of Specific and Nonspecific Protein to Its Production. W. S. Lemon and W. H. Feldman.—p. 177.
Nocardia Asteroides: Its Pathogenicity and Allergic Properties. C. H. Drake and A. T. Henrici.—p. 184.

Annals of Internal Medicine, Lancaster, Pa.

19:405-566 (Sept.) 1943

Physiologic Reactions of Thyroid Stimulating Hormone of Pituitary: II. Effect of Normal and Pathologic Human Thyroid Tissues on Activity of Thyroid Stimulating Hormone. R. W. Rawson, Ruth M. Graham and Charlotte B. Riddell.—p. 405.
Personnel Selection: Short Method for Selection of Combat Officers. C. W. Heath, W. L. Woods, L. Brouha, C. C. Seltzer and A. V. Bock.—p. 415.
Postconcussion Syndrome—A Critique. D. Denny-Brown.—p. 427.
*Disabling Changes in Hands Resembling Sclerodactylia Following Myocardial Infarction. A. C. Johnson.—p. 433.
Adjustment in Wartime. E. L. Bortz.—p. 457.
Neurogenic Polycythemia. G. Carpenter, H. Schwartz and A. E. Walker.—p. 470.
Role of Central Factors in Pathogenesis of Rheumatic Disorders. R. Pemberton and C. W. Scull.—p. 482.

Sclerodactylia-like Changes Following Myocardial Infarction.—Johnson observed trophic changes of the hands in 39 (21 per cent) of 178 consecutive cases of myocardial infarction. The appearance and course of these alterations were not similar to those seen in arthritis, but they resembled closely those in the hands of patients suffering with scleroderma and of patients having an abortive form of Raynaud's disease. The author presents the clinical observations on the 39 cases in a table. The term "postinfarction sclerodactylia" is offered as a name for this syndrome. The author thinks that many cases showing this syndrome are at the present time classified as rheumatoid arthritis, atrophic arthritis, atypical arthritis, causalgia, and so on. He suggests that the cause of "postinfarction sclerodactylia" is anoxia of the tissues of the fingers, produced chiefly by ischemia resulting from reflex vasoconstriction of the arteries of the hand, and that the lesser ischemic effects of arteriosclerosis of these arteries and the local anoxemia of the fingers which is part of the general anoxemia resulting from myocardial injury may increase the degree of the damaging tissue anoxia.

Archives of Otolaryngology, Chicago

38:205-308 (Sept.) 1943

End Results of Treatment of Malignant Lesions of Nasopharynx. G. B. New and W. Stevenson.—p. 205.
*Peritonsillitis and Peritonsillar Abscess, with Special Reference to Treatment with Sulfonamide Compounds. B. Capus, p. 210.
New Approach to Treatment of Snoring: Preliminary Report. J. F. Strauss.—p. 225.
Abscess of Pterygomaxillary Space with Involvement of Mandibular Fossa: Review of Literature and Report of Case. I. I. Shure.—p. 230.
Cholesteatoma of External Auditory Meatus. F. Altmann and J. G. Waltner.—p. 236.
Fate of Liquid Petrolatum Instilled into Nose. F. J. Novak Jr.—p. 241.
Influence of Vestibular Stimulation on Fusion Frequency of Flicker in Normal Subjects and in Patients with Postconcussion Syndrome. E. Simonson. M. S. Fox and N. Enzer.—p. 245.
Hearing Aid from Patient's Point of View. W. Hughson and Eva Thompson.—p. 252
Post-Therapy Observations on over 2,000 Subjects with Speech Defects. C. H. Voelker.—p. 261.
Sarcoma of Larynx. G. B. Ferguson.—p. 265.
Paranasal Sinuses: Review of Literature for 1942. S. Salinger.—p. 270.

Sulfonamides in Peritonsillitis and Peritonsillar Abscess.—Capus used sulfonamide compounds in 33 unselected cases of peritonsillitis and peritonsillar abscess. In the first 10 cases sulfanilamide was employed, in the following 19 cases sulfathiazole, and in the last 4 cases sulfadiazine. Analysis of the results of this study lead the author to believe that peritonsillitis and peritonsillar abscess are due principally to a mixed infection rather than to the beta hemolytic streptococcus. The commonest type of mixed infection was that due to combination of the beta hemolytic streptococcus and Staphylococcus aureus alone or with other organisms. Sulfanilamide has a beneficial action, since it causes spontaneous regression in some cases and tends to prevent complications. However, recurrences are common with its use. Sulfathiazole is far superior to sulfanilamide, causing resorption in a greater number of cases, and recurrences are not common with its use. Sulfathiazole has a decided masking action on the symptoms without necessarily preventing progression to abscess formation and so enables one to avoid incision and drainage in most cases of abscess formation, or at least to wait for clearcut evidence of fluctuation before carrying out this procedure. Sulfadiazine is probably the drug of choice, but further study is needed to confirm this conclusion. The dreaded complications of peritonsillar abscess are uncommon when therapy with one of the sulfonamide compounds is employed. Conservative treatment supplemented by use of a sulfonamide compound is far safer and more satisfactory than tonsillectomy.

Archives of Pathology, Chicago

36:237-334 (Sept.) 1943

Utilization of Calcium by Rats on High Protein-Low Calcium and High Carbohydrate-Low Calcium Diets: Effect of Supplementary Vitamin D. L. G. Wesson and P. E. Boyle.—p. 237.
Influence of Vitamin D on Structure of Teeth and of Bones of Rats on Low Calcium Diets. P. E. Boyle and L. G. Wesson.—p. 243.
Incomplete Rupture of Aorta Not Followed by Dissecting Aneurysm: Report of 2 Cases. F. Wenger.—p. 253.
Advantages of Egg Culture Technic in Infectious Diseases: I. Meningitis: (*a*) Primary Isolation of Organisms from Spinal Fluid; (*b*) Culture of Spinal Fluid During Treatment with Sulfonamide Compounds. R. J. Blattner, Florence M. Heys and A. F. Hartmann.—p. 262.
Chemial Basis of Injury in Inflammation. V. Menkin.—p. 269.
Hypertensive Disease of Brain. I. M. Scheinker.—p. 289.
Experimental Appendical Mucocele, Myxoglobulosis and Peritoneal Pseudomyxoma. A. S. Rubnitz and H. T. Hermann.—p. 297.
Disseminated Lupus Erythematosus—An Allergic Disease? R. A. Fox.—p. 311.

Bulletin of Johns Hopkins Hospital, Baltimore

73:143-238 (Sept.) 1943

Studies on Mitotic Activity of Corneal Epithelium: Methods; Effects of Colchicine, Ether, Cocaine and Ephedrine. W. Buschke, J. S. Friedenwald and W. Fleischmann.—p. 143
Electrocardiographic Changes Associated with Thiamine Deficiency in Pigs. M. M. Wintrobe, R. Alcayaga, S. Humphreys and R. H. Follis Jr.—p. 169.
Plasma Proteins in Disseminated Lupus Erythematosus. A. F. Coburn and D. H Moore.—p. 196.
Scapulectomy and Cleidectomy in Rat. L. W. Pratt.—p. 223.

Canadian Journal of Public Health, Toronto

34:393-432 (Sept.) 1943

Facilitation Process and Venereal Disease Control: Study of Source Finding and Suppression of Facilitation in Greater Vancouver Area. D. H. Williams.—p. 393.
*Tetanus Toxoid and Its Use for Active Immunization. D. T. Fraser, D. L. MacLean, M. D. Orr, H. C. Plummer and F. O. Wishart.—p. 406.
Tularemia in "Seven Persons Coulee," Alberta. M. R. Bow and J. H. Brown.—p. 415.
Examination of Sera from Persons in Manitoba, Ontario and Quebec for Neutralizing Antibodies (Western Type) of Encephalomyelitis. C. A. Mitchell and J. W. Pullin.—p. 419.

Tetanus Toxoid for Active Immunization.—Fraser and his associates state that by the use of a medium of veal infusion and hog stomach autolysate tetanus toxin of high titer has been obtained. The use of this toxoid did not cause anaphylactic reactions. The response in antitoxin in persons given three doses of tetanus toxoid is better than in persons given two doses. A small (0.1 cc.) secondary stimulus given ten weeks after the primary inoculation caused 85 per cent of 20 persons to show an increase in antitoxin titer within nine days. A combined antigen of tetanus toxoid with typhoid vaccine (T. A. B. T.) given in three 1 cc. doses three weeks apart stimulated the production of at least 0.02 unit of antitoxin in 99 per cent of 79 persons and at least 0.1 unit in 87 per cent. Although the conditions for a critical comparison are lacking, since the identical antigen was not used in the two groups compared, the results suggest that tetanus toxoid with the typhoid element added (T. A. B. T.) is more effective than without. Under field conditions the effectiveness of a recall dose of 0.5 cc. of T. A. B. T. was explored. Of 168 persons, 92 per cent had at least 0.1 unit of antitoxin per cubic centimeter of serum following the first recall dose. In general the antitoxin response to a recall dose is less in persons with low levels of antitoxin than in persons with relatively higher levels. The levels of antitoxin are distinctly higher in persons one year after a recall dose than one year after the primary inoculations. From ten days to seventeen months after a second recall dose, given one year after the first recall dose, all of 67 persons had at least 0.1 unit per cubic centimeter of serum. The recommendation is put forward that the first recall dose of T. A. B. T. (fourth dose) be given not less than three and not more than six months after the primary series of injections. Modification of this schedule may be advisable in order that a recall dose may coincide with the entry of troops into the combat zone.

Endocrinology, Springfield, Ill.

33:121-188 (Sept.) 1943

Factors Influencing Reproductive Cycle in Chimpanzee: Period of Adolescent Sterility and Related Problems. W. C. Young and R. M. Yerkes.—p. 121.
Effect of Thyroidectomy on Resistance to Low Environmental Temperature. C. P. Leblond and J. Gross.—p. 155.
Studies on Response of Hypophysectomized Rats to Intraperitoneal Glucose Injections. S. Joseph, Malvina Schweizer and R. Gaunt.—p. 161.
Effects of Pituitary Gonadotropins on Estrual Phenomena in Ewes. E. J. Warwick and L. E. Casida.—p. 169.
Relation of Body Weight to Liver Glycogen Storage Potency of Adrenal Cortical Extracts. H. C. Bergman and D. Klein.—p. 174.
Effect of Continued Oral Administration of Diethylstilbestrol on Blood Pressure, Heart Rate and Respiration of Albino Rats. C. S. Matthews, F. E. Emery and P. L. Weygandt.—p. 177.
Further Study of Specificity of Diabetogenic Effect of Diethylstilbestrol in Partially Depancreatized Rat. D. J. Ingle and J. Nezamis.—p. 181.

Journal of Infectious Diseases, Chicago

73:1-92 (July-Aug.) 1943

Direct Plasmodicidal Effect of Quinine, Atabrine and Plasmochin on Plasmodium Lophurae. R. I. Hewitt and A. P. Richardson.—p. 1.
Occurrence of Sulfonamide Resistant Pneumococci in Clinical Practice. M. Hamburger Jr., L. H. Schmidt, Clara L. Sesler, J. M. Ruegsegger and Eda S. Grupen.—p. 12.
Antigenic Analysis of Trichinella Spiralis. L. R. Melcher.—p. 31.
Factors Affecting Genetic Resistance of Mice to Mouse Typhoid. J. W. Gowen and M. Lois Calhoun.—p. 40.
Comparative Effect of Certain Sulfonamide Compounds on Nicotinamide Stimulated Metabolism. S. Berkman and S. A. Koser.—p. 57.
Studies on Experimental Bartonella Muris Anemia in Albino Rat. W. R. Kessler.—p. 65.
Chronic Toxoplasmosis. D. Weinman.—p. 85.

Journal National Malaria Society, Tallahassee, Fla.

2:5-78 (No. 1) 1943

War and Our Opportunity for Service. J. H. O'Neill.—p. 5.
National Malaria Society: A Sketch. M. F. Boyd.—p. 15.
Variations in Asexual Cycle of Plasmodium When Transferred to Abnormal Host. W. B. Redmond and R. M. Prather Jr.—p. 25.
Review of Recent Research on Drug Prophylaxis and Treatment of Malaria. (Report of National Malaria Society.) H. C. Clark.—p. 31.
*Malaria Mortality and Morbidity in United States for Year 1941. E. C. Faust.—p. 39.
Emergent Vegetation, Mechanical Properties of Water Surface and Distribution of Anopheles Larvae. C. E. Renn.—p. 47.
Studies on Mode of Action of Quinine in Avian Malaria. E. Waletzky and H. W. Brown.—p. 53.
Methods Used for Investigating Certain Hydrologic Problems Related to Malaria. M. H. Goodwin Jr. and Louva G. Lenert.—p. 63.
Totaquine and Conservation of Quinine. H. E. Meleney.—p. 77.

Malaria in the United States in 1941.—Faust stresses that the 1941 reports reveal a continued decline in malaria deaths, which began in 1936 and have with few exceptions decreased year by year. Malaria in the U. S. Army in the continental United States has consistently paralleled that of the civilian population but since 1918 has been considerably lower in cases and much lower in deaths. The former has been brought about by increasing prophylactic measures within the posts and in the immediate vicinity of army camps, the latter by early and accurate diagnosis and treatment of cases. The participation of military personnel from Northern states in the Louisiana-Texas area maneuvers in the early fall of 1941 was reflected in increased malaria cases in these troops on their return to quarters in the Fifth and Sixth Corps areas. This suggests that malaria is not necessarily declining but is only temporarily suppressed in endemic foci and awaits completely nonimmune subjects for reactivation. Soldiers and civilian employees in tropical defense bases will be contracting malaria in tropical defense and combat areas and will sooner or later be returned to the continental United States as convalescent carriers. This will offer a potential opportunity for heterologous tropical strains of malaria plasmodia to become established in our midst. Thus in the near future a new malaria problem may significantly alter the present trend in reduced malaria morbidity and mortality in the United States.

Journal of Pediatrics, St. Louis

23:251-370 (Sept.) 1943

Macrosomia, Cardiac Hypertrophy, Erythroblastosis and Hyperplasia of Islands of Langerhans in Infants Born to Diabetic Mothers. H. C. Miller and H. M. Wilson.—p. 251.
Studies of Nitrogen and Fat Metabolism on Infants and Children with Pancreatic Fibrosis A. T. Shohl, C. D. May and H. Schwachman.—p. 267.
Skin Disease of Newborn Infant: Consideration of Relationships Between Leiner's and Ritter's Disease with Case Report. M. E. Sano.—p. 280.
*Rh Factor and Its Importance in Transfusion for Anemias of Erythroblastosis and Other Causes: Case Reports. H. R. Brown Jr. and P. Levine.—p. 290.
*Mortality in Acute Staphylococcal Empyema in Infants and Children: Study of 33 Surgically Treated Patients. W. E. Ladd and H. Swan.—p. 297.
Use of Acetylarsan in Treatment of Congenital Syphilis in Children. J. Yampolsky and C. C. Powel.—p. 303.
Whole Lactic Acid Evaporated Milk Does Not Require Refrigerator. H. G. Taylor and R. W. Roberts Jr.—p. 307.
Use of Cereal Thickened Formulas to Promote Maternal Nursing. C. A. Stewart.—p. 310.
Emotional Disturbances of Constant Pattern Following Nonspecific Respiratory Infections. Helen G. Richter.—p. 315.
Use of Suppository as Vehicle in Sulfonamide Therapy. J. H. Park Jr.—p. 326.
Trichinosis During Childhood. H. A. Slesinger.—p. 327.
Treatment of Kaposi's Varicelliform Eruption with Sulfonamide Drugs. Angie Connor and J. E. Gonce Jr.—p. 335.
Obstruction of Large Bowel in Newborn Infants Due to Congenital Bands. J. Zaslow.—p. 337.
Typhoid Fever in Seven Month Old Infant. W. Sako and J. Fleet.—p. 340.
Problems in Safeguarding Adoptions. H. K. Berkley and Mary Ruth Colby.—p. 344.
Pulmonary Manifestations Following Ingestion of Kerosene. L. I. Lesser, H. S. Weens and J. D. McKey.—p. 352.
Acute Infectious Myelitis Following Rubella. M. H. Morris and A. Robbins.—p. 365.

Rh Factor in Transfusion for Anemias of Erythroblastosis.—Isoimmunization with Rh factor can be caused either by repeated transfusions of Rh— patients with Rh+ blood or by pregnancy in Rh— mothers with Rh+ fetuses. Brown and Levine report 2 cases in which important therapeutic applications of the knowledge of Rh immunization are illustrated. The first patient, an infant 9 days old with diagnosis of erythroblastosis fetalis, was treated with blood transfusions. Prior to the demonstration of anti Rh agglutinins in the mother's serum, three transfusions of the mother's blood were given to the infant with consequent aggravation of the condition. On the use of Rh— blood in the transfusion, an immediate increase in red cell count and hemoglobin was observed. Owing to the susceptibility of the Rh+ fetal blood to the action of maternal agglutinins, Rh+ blood should be avoided in the treatment of erythroblastosis fetalis. The use of Rh— donors is necessary for the treatment of this condition. The second patient, a woman aged 42, was being treated with repeated blood transfusions for liver cirrhosis accompanied by severe anemia. Even though the same donors were used, after a number of transfusions the patient suddenly developed a severe and almost fatal reaction. Each of six donors previously compatible was now incompatible with the patient's serum and all were RH+. When Rh— donors were used, no reaction occurred. The authors point out that 90 per cent of all intragroup transfusion accidents following repeated transfusions occur in Rh— individuals.

Mortality in Acute Staphylococcic Empyema in Infants and Children.—Ladd and Swan analyzed the mortality rate in 33 cases of acute staphylococcic empyema in children under 13 years of age. The incidence of staphylococcic empyema was preponderantly highest in the first year of life. Of 33 patients, 22 were less than 1 year old. The mortality rate appeared also to be essentially dependent on the age of the patient. Thus, in 12 patients less than 4 months old the mortality was 66.7 per cent, whereas in 21 patients over 4 months of age the mortality was 4.8 per cent. The presence or absence of complications had no relation to the ultimate outcome. The higher mortality in early infancy suggests an abnormal pathologic and immunologic response to staphylococcic infection in this age group. Postmortem examination revealed in the younger infants the presence of widespread hemorrhagic exudative pneumonia. The progression of the underlying staphylococcic pneumonic process, and not empyema, appeared to be the cause of death.

Missouri State Medical Assn. Journal, St. Louis

40:269-304 (Sept.) 1943

Adiposogenital Dystrophy (So-Called Froehlich's Syndrome). A. A. Werner.—p. 269.
Contact Dermatitis: Its Diagnosis and Treatment. N. Tobias.—p. 272.
Ellis Fischel State Cancer Hospital: Report to Physicians of Missouri. L. V. Ackerman.—p. 276.
Sodium Sulfocyanate (Thiocyanate) in Treatment of Hypertension. D. M. Petersen.—p. 279.

40:305-338 (Oct.) 1943

Two Hundred Deliveries Under Low Spinal Anesthesia. B. H. Klein.—p. 305.
Nonparasitic Cysts of Liver: Report of 2 Cases and an Analysis of Literature. J. M. McCaughan and L. Rassieur.—p. 306.
Pruritus Ani Associated with Menstruation. C. C. Wilson.—p. 312.
Problems in Diagnosis of Heart Disease. J. C. Edwards.—p. 314.

New England Journal of Medicine, Boston

229:423-454 (Sept. 9) 1943

Acute Pericarditis with Special Reference to Changes in Heart Size. L. Wolff.—p. 423.
*Intraperitoneal Use of Sulfanilamide in Gastrointestinal Resections. T. J. Anglem and H. M. Clute.—p. 432.
*Antithiamine Factor in Fish. P. S. Owen and J. W. Ferrebee.—p. 435.
General Anesthesia. L. P. Zentgraf and U. H. Eversole.—p. 437.

Intraperitoneal Use of Sulfanilamide in Gastrointestinal Resections.—Anglem and Clute used sulfanilamide as a prophylactic agent by local implantation within the peritoneal cavity in 75 cases of gastrointestinal anastomosis or other operative procedures requiring the opening and closure of hollow viscera within the peritoneal cavity. Sulfanilamide was applied intraperitoneally along the suture lines in the viscera. There were no deaths from peritonitis. Clear evidence of intraperitoneal infection was observed post mortem in only 1 fatal case and in this case was not the cause of death. Only 1 patient had a toxic reaction to the drug, a toxic hepatitis with recovery. The experience with this series has convinced the authors of

the value of the local intraperitoneal use of sulfanilamide along the suture lines after gastrointestinal anastomosis and in all cases with peritoneal soiling. The danger of serious toxic reaction to the drug is slight if the intraperitoneal dosage does not exceed an average dose of 8 Gm. in adults and if this dose is not immediately preceded or followed by the additional oral administration of a sulfonamide.

Antithiamine Factor in Fish.—Owen and Ferrebee point out that epidemics of a severe and unusually fatal paralytic disturbance have been observed in animals when fish has been added to their diet. The first symptom is anorexia, which is usually followed in a few days by weakness, hyperesthesia, ataxia and death. The disease is evidently one of thiamine deficiency, since it may be produced by thiamine deficiency under experimental conditions and may be cured by thiamine injections. The disease has been observed following the consumption of carp, Atlantic Coast whiting, Pacific Coast mackerel, Lake Superior and Lake Michigan herring, suckers, smelts, mullets and great northern pike. Diets containing 20 per cent of fish muscle were found to be innocuous, whereas diets containing 10 per cent of whole raw fish promptly produced symptoms. There are a number of reasons why thiamine deficiency of this particular mechanism of origin may not be frequent in man. The portions of fish that are rich in antithiamine factor are for the most part those usually discarded in the preparation of fish for human consumption; that is, viscera, heads, skins and scales. Furthermore, the antithiamine factor is destroyed by cooking or drying.

229:455-494 (Sept. 16) 1943

Endemic Rocky Mountain Spotted Fever in Massachusetts. A. D. Rubenstein and H. F. Rowley.—p. 455.
*Ascorbic Acid Content of Late Winter Tomatoes. A. D. Holmes, C. P. Jones and W. S. Ritchie.—p. 461.
Incidence of Gallstones in Higher Age Groups. F. I. Dessau.—p. 464.
Kineplastic Amputation of Forearm. J. D. Adams.—p. 466.
Cancer: Results of Treatment. I. T. Nathanson.—p. 468.

229:495-532 (Sept. 23) 1943

Nutritional Requirements in Time of War. R. M. Wilder.—p. 495.
Sarcoidosis. S. Katz, C. P. Cake and H. R. Reed.—p. 498.
Use of Dalibour's Water in Treatment of Skin Diseases. G. E. Morris.—p. 509.
"Dry Ice" Burn of Hypopharynx: Report of Case. J. E. Quincy.—p. 510.
Chemical Factors in Inflammation and Cellular Injury. V. Menkin.—p. 511.

Ascorbic Acid Content of Late Winter Tomatoes.—Holmes and his associates point out that a number of factors affect the amount of ascorbic acid developed in tomatoes. During the late winter and early spring months tomatoes are commonly found in the stores which in neither color, taste nor physical appearance compare with the high quality of the field grown, vine matured summer tomatoes. As these tomatoes are grown, shipped and sold under conditions quite different from those of the normal, local growing season, it appeared desirable to determine the ascorbic acid content of typical late winter tomatoes. The tomatoes analyzed were obtained from six local stores. It was found that the ascorbic acid content of the late winter tomatoes is only about one third that of summer tomatoes. Hence it is obvious that whereas the late winter tomato possesses attractive decorative features for the table, particularly in salad combinations, it does not have the ascorbic acid value of fresh summer tomatoes or of tomatoes canned six months previously. The homemaker, nutritionist and physician must not consider late winter tomatoes as equivalent to vine matured, sun ripened summer tomatoes as a source of ascorbic acid for the human dietary. In computing the vitamin C value of a diet containing late winter tomatoes, one should not assign to them more than one third the ascorbic acid value ordinarily used for fully ripe summer tomatoes.

New Jersey Medical Society Journal, Trenton

40:349-378 (Sept.) 1943

Cryotherapy for Common Skin Diseases. C. C. Carpenter.—p. 354.
Primary Atypical Pneumonia: Clinical Description of Disease Based on 250 Cases. M. Kasich and I. S. Cohen.—p. 358.
Anemia of Pregnancy. T. K. Graham.—p. 365.

Northwest Medicine, Seattle

42:241-274 (Sept.) 1943

Child as Wartime Problem. R. H. Parry.—p. 244.
Insects and Their Allies as Causative Agents and Transmitters of Disease. E. C. Faust.—p. 250.
Causes of Postoperative Deaths. D. Metheny, K. K. Sherwood and B. Zimmerman.—p. 258.
Medical Department of Navy. H. H. Kretzler.—p. 260.
Relation of Structure of Adrenal Cortex to Function in Hypertension. W. B. Dublin.—p. 263.

South Carolina Medical Assn. Journal, Florence

39:225-248 (Sept.) 1943

Coronary Embolism: Report of Case Complicating Syphilitic Aortitis. H. R. Pratt-Thomas.—p. 225.
Medical Statistics of South Carolina: II. Factors of Urbanization and County Wealth in State Distribution of Physicians. A. M. Lassek.—p. 228.
Technic of Management of Hernia Sac. K. M. Lippert.—p. 233.

39:249-262 (Oct.) 1943

Meningitis in Newborn Infant Due to Colon Bacillus. J. I. Waring.—p. 249.
Tale of Two Sisters (Pseudohermaphroditism). A. E. Baker.—p. 251.
Galvanize Poisoning in Industry. R. W. Lominack.—p. 252.

Surgery, Gynecology and Obstetrics, Chicago

77:225-336 (Sept.) 1943

Oblique, Aseptic, End to End Ileac Anastomosis, Procedure of Choice in Strangulating Small Bowel Obstruction. C. Dennis.—p. 225.
Wound Healing—Experimental and Statistical Study: III. Experimental Observations. S. A. Localio, W. Casale and J. W. Hinton.—p. 243.
Acute Obstructive Cholecystitis and Application of Principles of Its Rational Treatment. J. H. Saint.—p. 250.
Changes in Extracellular Water at Delivery and in Puerperium. L. C. Chesley and Janet M. Boog.—p. 261.
Thoracic Injuries: Review of Cases. D. C. Elkin and F. W. Cooper Jr.—p. 271.
Cystosarcoma Phylloides: with Consideration of Its More Malignant Variant. W. G. Cooper Jr. and L. V. Ackerman.—p. 279.
*Radiodermatitis of Head and Neck with Discussion of Its Surgical Treatment. F. A. Figi, G. B. New and C. R. Dix.—p. 284.
Malignant Tumors of Kidney: Surgical and Prognostic Significance of Tumor Thrombosis of Renal Vein. J. R. McDonald and J. T. Priestley.—p. 295.
Congenital Dislocation of Hip with Special Attention to After-Care Period and Late Postreductive Results. G. Whiston.—p. 307.
Surgical Treatment of Bronchiectasis: Report on 76 Patients. H. H. Bradshaw and J. F. O'Neill.—p. 315.
Omphalocele: Anatomic and Clinical Considerations. N. W. Specht and E. H. Shryock.—p. 319.
Avulsion of Scrotum and Skin of Penis: Technic of Delayed and Immediate Repair. L. T. Byars.—p. 326.

Surgical Treatment of Radiodermatitis.—According to Figi and his collaborators, radiodermatitis often is more serious than the condition for which treatment was given primarily. Overexposure during diagnostic or therapeutic procedures usually is responsible for such lesions, but individual susceptibility is an important etiologic factor. The acute stage of the disease is self limiting unless excessive reaction is present, and surgical treatment is contraindicated during this period. The chronic stage of the process is progressive and there is a decided tendency for epithelioma to develop. Surgical removal is the only means of controlling the condition when secondary irradiation changes are pronounced. Primary closure of the wound is at times possible following excision of the region of radiodermatitis. When this is not feasible, application of a free skin graft or use of a sliding flap or a pedicle flap is required. The ultimate result in these cases as a rule is satisfactory.

West Virginia Medical Journal, Charleston

39:297-332 (Sept.) 1943

Medical Aspects of Hypertension. I. H. Page.—p. 297.
Social Problems of Gynecology and Obstetrics. A. F. Guttmacher.—p. 300.
Citizenship as Related to Licensure. W. E. Vest.—p. 307.
Symptoms of Disease of Infantile Paralysis. Elizabeth Kenny.—p. 312.

39:333-364 (Oct.) 1943

Chemotherapy of Tropical Diseases: Some Aspects of Progress Through Research. G. A. Emerson.—p. 333.
Tropical Dysenteries. J. S. Maxwell.—p. 338.
Hookworm. C. C. Fenton.—p. 341.
Parasites of Livestock in Tropics. J. H. Rietz.—p. 345.
War Malaria: Its Significance in Civilian Practice. R. H. Kunstadter.—p. 346.

FOREIGN

An asterisk (*) before a title indicates that the article is abstracted below. Single case reports and trials of new drugs are usually omitted.

British Journal of Anesthesia, Manchester

18:141-192 (July) 1943

Ether versus Cyclopropane (Statistical Comparison of Circulatory Complications After Abdominal Operations). C. Eisenhart, R. A. Simpson and N. A. Gillespie.—p. 141.
Method of Keeping Anesthetic Records and Assessing Results. M. Nosworthy.—p. 160.
Anesthetic Record. P. Ayre.—p. 180.

British Medical Journal, London

2:289-318 (Sept. 4) 1943

*Rh Factor and Erythroblastosis Fetalis: Investigation of 50 Families. R. R. Race, G. L. Taylor, D. F. Cappell and Marjory N. McFarlane.—p. 289
*Hemolytic Disease of Newborn (Erythroblastosis Fetalis). Its Treatment with Rhesus Negative Blood. Janet D. Gimson.—p. 293.
*Occurrence of Rh Antigen in Population: Notes on 5 Cases of Erythroblastosis Fetalis. E. D. Hoare.—p. 297.
Note on Rehabilitation of Heart Patients. B. Parsons-Smith.—p. 298.

2:319-350 (Sept. 11) 1943

Transfusion Reactions and Fatalities Consequent on Circulatory Overloading. R. Drummond.—p. 319.
Effect on Uterus of Extracts of Gorse (Ulex Gallii). W. Smith and A. Wilson.—p. 322.
Analysis of Acute Respiratory Conditions in African Soldiers. W. W. MacNaught and R. M. Murray-Lyon.—p. 324.
Night Vision in Army: Report of 10,333 Tests by A. Lister and J. W. Bishop.—p. 325.
Filariasis in Middle East. J. Fine and Livny.—p. 327.
Determination of Hematocrit Values in Wound Shock: Routine Procedure. M. Reiss.—p. 328.

Fetal Erythroblastosis.—Race and his co-workers report observations on fifty families in which fetal erythroblastosis was diagnosed. The cases were referred to them by practitioners and pathologists from many parts of Britain. It seems reasonably certain that the diagnosis of erythroblastosis was correct. Of the 50 mothers, 6 were Rh positive and 44 were Rh negative. In the serums of 38 of these Rh negative women were found anti Rh agglutinins. In spite of the absence of demonstrable anti Rh agglutinins in 6 Rh negative cases it is highly probable that isoimmunization of the mother to the Rh factor played a part; the absence of anti Rh may in some of them have been due to the length of time since delivery, which on the average was four years as against less than a year for the 38 cases in which antibody was found. While Rh is the blood group factor most commonly involved in the causation of fetal erythroblastosis, it appears certain that other red cell antigens may behave in a similar way. In one pregnancy in five the mother's serum contains an isoagglutinin for an antigen of the A-B-O system of groups present in her fetus. This will always be so when the fetus is of group AB save in about 1 case in 6, in which the mother will also be of group AB. In such a heterospecific pregnancy the mother's natural isoagglutinins might perhaps cause the destruction of her child's red cells. There is reason to believe that all Rh positive children of Rh negative mothers are not equally liable to the disease. In most families two or three positive children seem to be necessary before an affected child is produced. Of the first children borne by the 44 Rh negative mothers 38 were unaffected, 5 were stillbirths or miscarriages and 1 is known to have suffered from the disease. About a quarter of the children diagnosed as having erythroblastosis survived; three fourths were born dead or died mostly within a week of birth.

Hemolytic Disease of the Newborn.—Gimson reports 19 consecutive cases of hemolytic disease of the newborn. All the mothers were Rh negative and all the infants were Rh positive. Anti Rh agglutinins were found in the mother's serum in all but 1 case. At the beginning of the series a transfusion of Rh positive blood was given when the condition was such that it was unjustifiable to withhold treatment until the Rh picture had been determined and a supply of Rh negative blood had been obtained. In the first three cases in which Rh positive blood was used there was evidence of continued and even increased hemolysis. Within a few hours or days the hemoglobin and erythrocyte levels had fallen considerably and the infants were in need of further transfusion. The next transfusion was of Rh negative blood. The rationale of giving Rh negative blood free of agglutinins is that the fetal blood is Rh positive and is undergoing destruction. It is desirable to give blood which is not so destroyed. Further hemolysis of the patient's red cells is not prevented by giving Rh negative blood. Blood is being provided, however, which will not be destroyed more rapidly than normal and on which the infant can live until the hemolytic process of the disease has come to an end. In a few cases mixed transfusions of Rh positive and Rh negative blood were given so that the survival rate of the two types of erythrocyte could be studied. Rh negative erythrocytes were usually found to survive for at least ninety days, whereas Rh positive erythrocytes were often destroyed within a few days of transfusion. All 18 of the infants who were given blood transfusions regained and maintained a normal blood picture, whereas only 7 of a group of 17 treated between 1935 and 1941 progressed satisfactorily. Transfusion with rhesus negative blood free of agglutinins should be employed for the treatment of hemolytic disease of the newborn. A relatively large transfusion is advocated, as no hemolytic reaction need be anticipated. A minimum number of transfusions will be necessary. A store of rhesus negative blood free of agglutinins should be available to all pediatric units and maternity hospitals. Pregnant women who have previously borne an infant with hemolytic disease should be tested for the rhesus factor. If Rh negative, she should be delivered in a maternity institution where Rh negative blood is available. For an infant born jaundiced, with a family history of hemolytic disease, immediate transfusion with Rh negative blood free of agglutinins should be given, no matter what the erythrocyte and hemoglobin levels.

Occurrence of Rh Antigen in Population.—Hoare determined the incidence of the Rh factor in 1,122 unselected blood donors. There were 949 (84.6 per cent) with Rh positive blood and 173 (15.4 per cent) with Rh negative blood. The author also describes 5 cases of fetal erythroblastosis. In all of them the father and child were Rh positive while the mother was Rh negative. In all cases the mother's serum contained Rh antibodies. At the time these cases occurred the reports that Rh negative blood often survived longer in the circulation of infants with fetal erythroblastosis than Rh positive blood had not appeared, and as there was no theoretical reason against the use of Rh positive blood the Rh grouping of the transfused blood was not determined.

2:351-380 (Sept. 18) 1943

Medical Research in Wartime. E. Mellanby.—p. 351.
Pituitary Hypothyroidism with Impaired Renal Function. G. E. Beaumont and J. D. Robertson.—p. 356.
Human Infection with Bact. Cholerae-Suis: Report of 2 Cases. Herta Schwabacher, Joan Taylor and M. H. G. White.—p. 358.
*Sympathectomy in Treatment of Cryopathies E. D. Telford.—p. 360.
*Misuse of Intravenous Neoarsphenamine for Vincent's Infection. E. C. O. Jewesbury.—p. 360.
Physiologic Factor in Hemoglobinometry. E. F. McCarthy.—p. 362.

Sympathectomy for Cryopathies.—The cryopathies include frostbite, immersion foot and hand, trench foot and shelter foot. Telford believes that the inclusion of these lesions in one group is justified by the fact that the pathologic changes are identical; they differ only in the degree of damage. In the treatment of these patients the temperature of the damaged parts must be raised with extreme slowness and caution. A too rapid return to normal will be disastrous. Sympathectomy was advocated in the immediate treatment, but against this suggestion is the fact that after rescue the chilled areas become notably hyperemic. Although the majority of patients appear to make a good recovery with no, or trivial, loss of tissue, others continue to suffer from symptoms which are due to a combination of sclerosis and deficient blood supply. The after troubles most often seen are pain of a burning or tingling type increased by warmth and exertion, persistent indurated swelling, chronic ulcers of pulps or extremities of digital stumps, loss of movement of fingers and toes, and occasionally a sensitization to cold which results in the Raynaud phenomenon. Hyperhidrosis may also be troublesome. These end results are those of vascular occlusion. For these later troubles a sympathectomy may offer some relief. The author treated the later sequences of trauma from

cold by preganglionic sympathectomy in 5 cases. In each of these cases a gratifying relief of symptoms has been obtained. It appears that sympathectomy is worth while in the chronic and painful sequelae of the cryopathies.

Misuse of Intravenous Neoarsphenamine for Vincent's Infection.—Jewesbury points out that there still seems to be a fairly widespread impression that intravenous neoarsphenamine is the most potent method of treatment in severe cases of trench mouth or Vincent's infection. Occasional reports of Vincent's infection occurring in patients undergoing antisyphilitic treatment have cast doubt on the efficacy of intramuscular or intravenous arsenic administration in dealing with lesions of the mouth. The author cites histories of 2 men who developed Vincent's infection while undergoing neoarsphenamine treatment for syphilis. He feels that, if the drug is valueless prophylactically, skepticism as to its value as a single intravenous injection for Vincent's angina is even more justified. Treatment of Vincent's infection calls primarily for treatment of the underlying condition, whether it is local or general. Nutritional deficiencies must be remedied. Healing of the lesions in the mouth is best accomplished by daily local applications of 10 per cent chromic acid, followed immediately by hydrogen peroxide (10 vols.) and subsequent two hourly mouth washes of peroxide. This local treatment is particularly valuable when combined with 150 mg. of nicotinic acid daily by mouth. The author hopes that the employment of intravenous arsenical compounds for this condition will be recognized as useless and wasteful.

Journal of Pathology and Bacteriology, Edinburgh

55:245-396 (July) 1943

Necrosis of Islets of Langerhans Produced Experimentally. J. S. Dunn, J. Kirkpatrick. N. G. B. McLetchie and S. V. Telfer.—p. 245.
Immediate Vascular Changes in True Frostbite. R. Greene.—p. 259.
Further Experiments on Effects Produced by Extracts of H. Pertussis on Blood Sugar of Rabbits. D. G. Evans.—p. 269.
Toxin Production by Three Types of C. Diphtheriae. K. Zinnemann.—p. 275.
Rapid Identification of Cl. Welchii by Nagler Tests in Plate Cultures. Nancy J. Hayward.—p. 285.
Two Cases of Interstitial Cell Tumor of Human Testis. Georgiana M. Bonser and Leila M. Hawksley.—p. 295.
Localization of Experimental Tumors in Scars and Healing Wounds. B. D. Pullinger.—p. 301.
Preparation of Phenolphthalein Phosphate. E. J. King.—p. 311.
Phosphatase Reaction as Aid to Identification of Micro-Organisms Using Phenolphthalein Phosphate as Substrate. J. Bray and E. J. King.—p. 315.
Metabolism of Coliform Bacilli in Distilled Water. J. W. Bigger and J. H. Nelson.—p. 321.
Group Specific Substances A, B, M, N and Rh: Their Occurrence in Tissues and Body Fluids. Kathleen E. Boorman and Barbara E. Dodd.—p. 329.
*Case of Adrenal Carcinoma and Its Hormone Diagnosis. A. F. Anderson, A. M. Hain and J. Patterson.—p. 341.
Production of Fatty Degeneration of Heart Muscle by High Fat Diet. A. D. T. Govan.—p. 351.
Seasonal Variation in Incidence of Brucella Abortus in Raw Milks. E. R. Jones.—p. 357.
Agglutination Test for Serologic Diagnosis of Syphilis. F. M. Berger.—p. 363.

Adrenal Carcinoma and Its Endocrine Diagnosis.—Anderson, Hain and Patterson report a case of amenorrhea of six months' duration, gain in weight and slight hirsutism in a woman aged 25. Physical examination excluded pregnancy. After sensitivity of the endometrium was demonstrated by an estrogen withdrawal bleeding an attempt was made to induce ovulation by administering pregnant mare's serum. The pregnandiol excretion was measured to determine the existence of a functional corpus luteum. Both before and after the administration of pregnant mare's serum the urinary pregnandiol value was high, around 12 mg. per day. A negative Aschheim-Zondek test confirmed absence of pregnancy. Since the only condition in which pregnandiol has been recovered in such amounts in the presence of prolonged amenorrhea unassociated with pregnancy is hyperplasia or tumor of the adrenal cortex, a provisional diagnosis of adrenal tumor was made. A very high urinary excretion of 17-keto steroids—215 mg. per day—substantiated this diagnosis. The course of pregnandiol excretion was studied and a steady rise in its daily output was found, which was interpreted as caused by a rapid growth of the tumor. X-ray examination revealed a large mass in the region of the left kidney. The patient died suddenly from massive pulmonary embolism before the operation could be undertaken. Necropsy showed an enormous tumor of the left adrenal weighing 1,780 Gm. The right adrenal was atrophic, weighing one half of the normal. Microscopic examination showed the tumor to be a carcinoma of the adrenal cortex. The authors stress the importance of high titers of pregnandiol and 17-keto steroids excretion in cases presenting amenorrhea or/and virilism for the diagnosis of hyperplasia and tumor of the adrenal cortex.

Lancet, London

2:211-242 (Aug. 21) 1943

Treatment of Head Wounds Due to Missiles: Analysis of 500 Cases. P. B. Ascroft.—p. 211.
Toxicity of Tannic Acid. J. M. Barnes and R. J. Rossiter.—p. 218.
*Liver Function in Rabbits After Injection of Tannic Acid. E. J. Clark and R. J. Rossiter.—p. 222.
*Combined Action of Antitoxin and Local Chemotherapy on Clostridium Welchi Infection in Mice. J. McIntosh and F. R. Selbie.—p. 224.

Liver Function in Rabbits After Injection of Tannic Acid.—Liver damage after tannic acid injection has been demonstrated microscopically by several investigators. Clark and Rossiter show that there is also impaired liver function as measured by the intravenous galactose-tolerance test of King, Harrison and Delory. In the intravenous test 1 Gm. of galactose per kilogram of body weight was injected into rabbits. The blood galactose was determined by the ferricyanide method after previous removal of the dextrose by yeast fermentation. The galactose tolerance test revealed a depression of liver function after the subcutaneous injection into rabbits of from 100 to 750 mg. of tannic acid per kilogram of body weight. This impairment of hepatic function has also been observed after intravenous injection of tannic acid in doses of from 5 to 10 mg. per kilogram of body weight. The observation that a decrease in liver function is produced more readily by subcutaneous than by intravenous injection of tannic acid is probably accounted for by continued absorption from the site of subcutaneous injection. Tannic acid applied to an experimental burn affects the animal adversely, and it seems likely that liver deficiency is a factor contributing to the ill effects.

Action of Antitoxin and Local Chemotherapy on Clostridium Welchi Infection in Mice.—McIntosh and Selbie earlier demonstrated that chemotherapeutic substances, particularly penicillin and proflavine, are of considerable value in preventing the development of experimental gas gangrene infection in mice when these remedies are applied locally in the early stages of the disease. In the later stages of the infection, when the organisms have invaded the blood stream, the local application of these drugs is apparently of much less value. The authors describe experiments designed to test whether any advantage could be gained by supplementing antitoxin with local chemotherapy especially in the later stages of the disease. On the basis of their observations the authors conclude that antitoxin treatment combined with local chemotherapy is more effective than antitoxin or chemotherapy alone in the treatment of Cl. welchi infection in mice. The results indicate that all patients with gas gangrene should receive adequate doses of antitoxin combined with full local treatment as soon as possible.

2:277-308 (Sept. 4) 1943

Findings in 262 Fatal Accidents. G. R. Osborn.—p. 277.
Prophylactic Inoculation with O Antigen of Bacterium Shigae. W. T. J. Morgan and H. Schütze—p. 284.
Aminoacridine Antiseptics: Comparison of 2: 7-Diaminoacridine, 5-Amino-Acridine and Proflavine. J. Ungar and F. A. Robinson.—p. 285.
*Diflavine in Wound Therapy. G. A. G. Mitchell and G. A. H. Buttle.—p. 287.
Serial Leukocyte Counts in Hospital Nurses Not Exposed to Radiation. C. J. C. Britton.—p. 289.
Electrolytic Action in Dental Appliances. A. B. MacGregor and B. W. Fickling.—p. 290.
Cocaine as Aid to Intubation in Infants. Margaret Hawksley.—p. 291.

Diflavine in Wound Therapy.—Mitchell and Buttle describe observations on the use of diflavine (2:7-diaminoacridine monohydrochloride) in wounds. They used diflavine in 47 patients and proflavine in over 200 cases. Most of the patients treated were battle casualties, and the lesions were of

all grades of severity. The impression was gained that diflavine is not quite as effective as proflavine. Diflavine and proflavine are active in vivo against streptococci, staphylococci and clostridia. Diflavine is possibly also effective against B. pyocyaneus. Diflavine and proflavine are less toxic than acriflavine.

2:309-340 (Sept. 11) 1943

*Mass Asphyxia: Medical Aspects of Tube Shelter Disaster. K. Simpson.—p. 309.
Gas Gangrene: Active Immunization by Means of Concentrated Toxoids. M. Robertson and J. Keppie.—p. 311.
Factors Affecting Response of Immunized Guinea Pigs to Antigenic Stimulus. P. Hartley, D. G. Evans and Olga M. Hartley.—p. 314.
Persistence of Tetanus Antitoxin in Man Following Active Immunization.—p. 316.
*Tanret Reaction in Subtertian Malaria. J. W. Howie and R. M. Murray-Lyon.—p. 317.
Plaster Technic in Fractures of Tibia and Fibula: Swallow Tailed Anterior Slab Method. E. A. Nicoll.—p. 320.
Blood Picture After Massive Transfusion. W. H. Hughes.—p. 321.

Mass Asphyxia.—Simpson gives an account of the circumstances of the shelter disaster in which over 200 people were piled in a tightly wedged heap on a flight of stone steps leading from the street level. In all 161 persons were dead when extricated and a further 12 died after admission to hospitals; 43 other persons made complete recoveries. The cause of death, although expressed generally as asphyxia, was complex. The author shows that emotional, reflex neurogenic, local cardiac and more general tissue chemical changes, direct compression of the chest or abdomen or constriction of the neck, concussional head injuries and inhalation of vomit may all be operating in groups or together. Many of these are capable of precipitating death within a few seconds. Extricated dead showed changes quite out of keeping with prolonged asphyxia. Danger to life ensues within seconds of the start of events. When emotional, vagal, carotid sinus, chest and abdominal compression, inhaled vomit, biochemical and other less important factors are operating together, only seconds are available to save life. This shelter disaster was no cool physiologic experiment. Factors dangerous to life were being combined in groups throughout that mass of people, and death picked out its victims here and there according to the mathematical whims of these factors. It was for this reason that almost the last person removed from the bottom stood up and walked to the first aid post unaided.

Tanret Reaction in Subtertian Malaria.—From observations on European troops in a hyperendemic area of subtertian malaria (southern Nigeria) Howie and Murray-Lyon believe that, properly used, the Tanret test has an even greater value than has been generally realized. They applied the test to every specimen of urine passed by 100 men admitted to the hospital with subtertian malaria. Treatment consisted of a week's course of quinine bisulfate in solution, given in three doses of 10 grains (0.65 Gm.) daily by mouth. Fifty-three soldiers in good health served as controls. They were given 5 grains (0.32 Gm.) of quinine in solution by mouth and their urines were examined for Tanret reactions at intervals of fifteen, thirty and sixty minutes after the test dose and then at hourly intervals until a positive reaction was found. Of the 100 soldiers with malaria, 88 showed a positive Tanret reaction within two to three hours of their first dose of quinine. Of the other 12 cases, 7 showed negative reactions. While the Tanret reactions remained negative the patients were all acutely ill, but after the intravenous quinine the Tanret reaction became positive and recovery was rapid. The remaining 5 showed occasional positive reactions. They were not dangerously ill and were not given intravenous quinine, but recovery was slow. During convalescence, 18 soldiers out of 100 excreted no quinine in the urine for twenty-four hours after a 5 grain suppressive dose. The minimum doses required to produce even one positive Tanret reaction in these 18 men varied between 10 and 40 grains. The histories of some show that they suffered too numerous attacks for their safety, an average of over seven attacks annually per man. One of the commonest misapprehensions regarding the Tanret test is that a positive reaction is obtained in the urine within fifteen minutes of taking a dose of quinine. Had the authors relied on no more than a single examination at one hour after the dose had been taken they should have recorded only 37.7 per cent as positive, whereas by continuing the examinations at hourly intervals up to five hours they found that all of 53 soldiers in normal health who had taken 5 grains of quinine gave positive reactions. The Tanret test is valuable in controlling the therapy of acute attacks. When Tanret reactions were completely absent during the treatment by mouth, the patients were all dangerously ill. Intravenous administration of quinine to such men was always followed by a rapid improvement accompanied by positive Tanret reactions.

2:341-372 (Sept. 18) 1943

*Local Therapy of War Wounds: I. With Penicillin. R. J. V. Pulvertaft.—p. 341.
Therapeutic Uses of Thorium-X. H. Corsi.—p. 346.
*Action of Nicotinic Acid on Carbohydrate Metabolism. F. J. Neuwahl.—p. 348.
Treatment of Burns with Triple Dye-Soap Mixture. C. N. Robinson.—p. 351.
Achalasia of Cardia: Treatment with Nitrites. A. H. Douthwaite.—p. 353.
Control of Ulnar Deviation of Fingers in Rheumatoid Arthritis. D. C. Bodenham.—p. 354.
Bacterial Endocarditis: Associated with Coagulase Negative Staphylococcus Albus. A. C. Cunliffe, G. G. Gillam and R. Williams.—p. 355.
Rapid Test for Bromide in Blood and Urine. T. C. Hall.—p. 355.

Local Therapy of War Wounds with Penicillin.—Pulvertaft reports that samples of sodium and calcium salts of penicillin were sent to the Middle East forces and a number of battle casualties were treated with them. As a preliminary the wounds were treated with an aspirating device similar to that used in empyema. The author thinks that some such device should be used always in conjunction with local therapeutic agents, since it is of little use to float these on a sea of pus. The penicillin salts were used as a powder, as a spray and as a wet dressing covered with soft paraffin gauze. The liquid was always painless; the powder in one case caused pain for thirty minutes. No deleterious effect was noted on wounds; but in 2 cases, when the calcium salt was injected intrathecally, severe reactions were noted. In 15 cases treated with penicillin salts there was a uniform and almost complete drop within twenty-four hours in the numbers of gram-positive organisms, including clostridia, staphylococci, streptococci and corynebacteria. Gram-negative organisms were not affected. Therapeutic results were excellent. The solid drug was introduced into a cerebral abscess cavity without deleterious effect. A few experiments with Penicillium notatum culture filtrates, made locally, gave satisfactory results.

Nicotinic Acid and Carbohydrate Metabolism.—Neuwahl reports observations on the action of nicotinic acid on carbohydrate metabolism in 15 nondiabetic subjects and 12 diabetic patients. The blood sugar depression curve and the effect of nicotinic acid on the arteriovenous difference in dextrose and on the response to injected insulin suggest that nicotinic acid may potentiate the action of insulin. The administration of nicotinic acid amide improved the carbohydrate tolerance of diabetic patients.

Helvetica Medica Acta, Basel

10:3-256 (April) 1943. **Partial Index**

Eosinophilia, Eosinophilic Leukocytosis, Pseudoleukemic Eosinophilia. R. M. Tecoz, L. de Weck and Frōhner.—p. 17.
*Resorption of Iron in Pernicious Anemia. G. Hemmeler.—p. 23.
Chronic Hemolytic Anemia with Nocturnal Hemoglobinuria. R. Heglin.—p. 27.
Familial Hemolytic Hypochromic Anemia. K. Rohr.—p. 31.
Behavior of Blood Sugar in Experimental Carbon Monoxide Poisoning and in Nitrogen Inhalation. S. Moeschlin and W. Wildermuth.—p. 39.
Nephritis and Nephrosis. W. Frey.—p. 51.
Cardiopulmonary Function in Double Pneumothorax. E. Jéquier-Doge.—p. 71.
*Temporary Eosinophilic Pulmonary Infiltration: Summary of More Than One Hundred Observations. C. Maier.—p. 95.
Significance of Sympathetic Structure for Development of Bronchial Asthma. B. Steinmann.—p. 111.
Renal Complications of Recklinghausen's Disease. R. S. Mach and A Perrot.—p. 237.

Absorption of Iron in Pernicious Anemia.—According to Hemmeler the iron content of the serum of patients with pernicious anemia is elevated, a fact which is partly explained by the augmented hemolysis and partly by the diminished iron requirements of the bone marrow due to impaired maturation of erythrocytes. The high iron content of the serum is not merely a passive phenomenon but is an active manifestation in the regulation of the serous iron. The high iron content of the blood serum makes possible maximum filling of the erythro-

cytes with hemoglobin. In this manner the numerical deficiency of erythrocytes is compensated by their quality. In the course of treatment with hepatic extracts the iron content of the serum becomes reduced and the depots are emptied. The anemia may eventually assume a hypochromic aspect since the iron depots no longer suffice for the production of the hemoglobin of the newly formed erythrocytes. The author presents plotted curves which indicate the variations in serous iron during liver treatment and the changes in the number of reticulocytes. A considerable reduction in the serous iron is noticeable on the day after the beginning of liver treatment. In certain cases the iron depots do not suffice for the needs of the bone marrow and iron treatment becomes necessary, otherwise pernicious anemia will not be compensated in spite of the continuation of liver therapy. To insure absorption of iron the author recommends the use of a stabilized ferrous salt which can be absorbed without the aid of the hydrochloric acid of the organism, but even with this preparation the iron absorption of the patient with pernicious anemia is less than that of a normal person. This is not surprising in view of the atrophy of the intestinal mucosa which exists in pernicious anemia.

Temporary Eosinophilic Pulmonary Infiltration.—On the basis of observations on more than 100 cases and the reports in the literature Maier is convinced that temporary pulmonary infiltrations with blood eosinophilia first described by Löffler in 1932 are of an allergic nature. The temporary infiltrations of patients with asthma, which have been known for a long time, are regarded by the author as pathogenically identical with the eosinophilic infiltration. An eosinophilic pneumonia is the anatomic basis of the syndrome. The allergens in question are proteins. The determination of the antigen is valuable for the diagnosis as well as for the measures to be taken in the individual case. The author's material contained no cases in which eosinophilic infiltration was definitely the manifestation of a specific tuberculous hyperergic reaction. It is probable, however, that patients with a history of tuberculosis may react with an eosinophilic infiltration. Atypical eosinophilic infiltrations do occur. Some forms persist for weeks or even for months. These cases require careful observation, because eosinophilia occurs sometimes in early tuberculous infiltrations.

Archivos de Oftalmología, Buenos Aires

18:125-178 (March) 1943. **Partial Index**

Sulfonamide Therapy in Trachoma. V. A. Victoria and M. Artigas. —p. 155.
*Syphilis of Conjunctiva. J. L. Castillo.—p. 165.

Syphilis of Conjunctiva.—Syphilis of the conjunctiva is rare. It may appear as a chancre, as simple conjunctivitis, as scleroconjunctival infiltration and pseudotrachoma of the tarsal conjunctiva and as gumma of the eyeball. There are no references in the literature to hereditary syphilis of the conjunctiva. A girl aged 10 years had subacute inflammation and infiltration of the cornea which simulated tuberculosis. The Kahn reaction was negative. The Mantoux test at 1:1,000 dilution was strongly positive. Antituberculosis treatment failed. Antisyphilitic therapy was administered because of the moderate hepatomegaly and splenomegaly, a mild diffuse adenopathy and a high palate. The Kahn and Kline tests became weakly positive in the course of antisyphilitic therapy. Rapid improvement and cure of the conjunctiva followed. The case was diagnosed as hereditary syphilis of the conjunctiva.

Ophthalmologia Ibero Americana, Buenos Aires

4:405-574 (No. 4) 1943. **Partial Index**

*Treatment of Corneal Diseases by Riboflavin. S. Barrenechea, R. Contardo, and J. Arentsen.—p. 405.
The Use of Vasodilators in Acute Fundus Diseases. F. C. Cordes. —p. 434.

Riboflavin for Corneal Diseases.—Barrenechea and his associates treated with riboflavin 109 patients presenting corneal ulcers and corneal vascularization of various causes. In 70 per cent of the cases the disappearanec of ulcers and vascularizations was remarkably rapid. The average time for the complete healing of the ulcers was seventy hours. The vascularization disappeared in three days to two weeks. The treatment failed in 30 per cent of the cases, 15 per cent of which were shown to be tuberculous ulcers, which flared up on the administration of riboflavin.

Prensa Médica Argentina, Buenos Aires

30:1035-1084 (June 9) 1943. **Partial Index**

Gastroduodenal Ulcer. M. R. Castex, A. L. C. Maggi and H. E. F. Stocker.—p. 1037.
Asymptomatic Aglucemia in Diabetes. Teresa Malamud and N. Moguilner.—p. 1045.
*Pathogenesis of Acute Pancreatitis. W. Tejerina Fotheringham. —p. 1068.

Pathogenesis of Acute Pancreatitis.—Tejerina Fotheringham believes that infected biliary lithiasis is the cause of acute pancreatitis. He identified Clostridium perfringens in cultures from the bile of the common bile duct, from urine and from fragments of pancreas of patients with acute pancreatitis. The organism was isolated in all acute cases. The collapse which is observed early in the course of acute pancreatitis is a symptom of infection similar to that which is caused by toxemia in burns. Operative treatment of biliary lithiasis is the best preventive measure against acute pancreatitis. The common bile duct, the sphincter of Oddi and the papilla of Vater are carefully examined during the operation. Residual lithiasis of the common bile duct is thus prevented. Early injections of coli antiserum and of perfringens antiserum in repeated doses exert a favorable effect on the collapse and the symptoms of acute pancreatitis. Morphine and pantopon are interdicted. Atropine and splanchnic anesthesia are useful in allaying pain, dyspnea, cyanosis and vomiting. Roentgen irradiations are indicated after recovery in order to effect gradual disappearance of the residual epigastric inflammation. Operative intervention on the biliary tract is indicated after recovery from pancreatitis as soon as the patient is strong enough to tolerate the procedure.

Semana Médica, Buenos Aires

50:1399-1454 (June 24) 1943. **Partial Index**

Diagnosis of Pulmonary Carcinoma. V. E. de Pablo.—p. 1399.
*Clinical Significance of Bleeding Nipples. A. P. Cinelli.—p. 1409.

Clinical Significance of Bleeding Nipples.—One hundred and thirty-six cases of breast disease were observed by Cinelli. Six (4.4 per cent) presented a bloody discharge from the nipple. The most frequent causes of this symptom are mammary carcinoma, cystic disease and intracanalicular papilloma. Less frequent are endocrine disturbances and trauma. In 5 of the 6 cases reported the lesion proved to be neoplastic, being a benign tumor in 4 and a malignant neoplasm in 1. In almost every instance the bloody discharge was an early and sometimes the only symptom of the pathologic condition of the breast.

Archiv für Gewerbepathologie, Berlin

11:131-310 (Dec. 31) 1941. **Partial Index**

*Disturbances of Liver with Special Reference to Cirrhosis of Liver from Arsenical Poisoning. P. Rössling.—p. 131.
*Importance of Vitamin Deficiency of Diet in Arsenical Poisoning. E. Zimmermann.—p 153.
Disease of Lungs Due to Inhaling Porphyry Dust. W. Hortsch.—p. 160.
Danger of Lead Poisoning by Admixture of Tetraethyl Lead as an Antiknock Agent. H. Waniek.—p 165.
Incidence and Cause of Furunculosis in Miners and Campaign Against It. K. H. Schölzke.—p. 170.
Metal Welder's Disease in Nonwelders. H. Waniek.—p. 179.
Occupational Poisoning by Carbon Disulfide. F. Warnecke.—p. 198.
Hazards of Tetraethyl Lead Poisoning. H. Kraut and G. Lehmann. —p. 256.

Cirrhosis of Liver from Arsenical Poisoning.—The toxic effect of arsenic on the liver varies depending on the duration and the dose of the drug. Involvement of the reticuloendothelial system, desquamation and necrosis of liver cells, simple catarrhal jaundice and acute yellow atrophy were present in acute cases of arsenical poisoning. Fatty degeneration, necrosis of liver cells, a proliferative process of the bile ducts and occasional periportal proliferation of connective tissue were demonstrated in chronic cases. A short but massive effect of the poison may result in death. Compensation may be more or less completely restored, but failure of compensation may result from chronic effect of a small dose of poison. The

occurrence of an atrophic cirrhosis (Laënnec's cirrhosis) due to arsenical poisoning alone does not seem probable. Simultaneous lesions caused by other agents played an important part in all the published clinical cases. Among them were alcohol, lead, nicotine, copper, infections, metabolic disturbances and cachexia. One should be cautious in evaluating results of arsenical poisoning in rabbits, since coccidiosis occurs frequently in these animals and resembles cirrhosis in its characteristics. Mild periportal proliferation, but not cirrhosis, could be experimentally produced by arsenical poisoning (Stoeber). The combined effect of several poisons (lead, arsenic) seems to be of particular importance. Cirrhosis results from the cumulative and supplementary effect of several substances. Chvostek's concept of diathesis of connective tissue and of abnormal predisposition to the development of cirrhosis suggests that the toxic effect of the poison is required only as an exciting agent. Cirrhosis in vine dressers should not be considered an occupational disease caused by arsenical poisoning.

Vitamin Deficiency in Arsenical Poisoning.—Zimmermann demonstrated that the toxic effect from prolonged feeding of white rats with arsenic trioxide was greater in animals on a diet deficient in vitamin A and B than in those on a normal diet. The arsenic had no effect on the symptoms of avitaminosis. There was no striking difference in the storage of arsenic in the liver of animals placed on a vitamin deficient or on a normal diet. Neither were such differences revealed on microscopic examination. The exaggerated susceptibility to arsenic trioxide of rats placed on a vitamin deficient diet suggests the importance of proper and highly valued vitamin supply in the diet of workmen who are exposed to poisoning in industry.

Deutsche Zeitschrift für Chirurgie, Berlin

255:173-416 (Feb. 19) 1942. **Partial Index**

*Peritonitis Fibroplastica. W. Hartmann.—p. 173.
Clinical Experiments with Sulfathiazole in Surgery. O. Schürch and G. Neff.—p. 216.
Arteriography, Procaine Hydrochloride Infiltration of Sympathetic Nerve and Sympathectomy in Lesions Produced by Freezing. A. Jung and H. Fell.—p. 249.
Treatment of Trigeminal Neuralgia. W. Sorgo.—p. 295.
Treatment of Massive and Continuous Hemorrhage in Duodenal Ulcer. E. Seifert.—p. 301.
Extra-Articular Implantation of Os Parum in Treatment of Habitual Dislocation of Shoulder. S. Orell.—p. 329.
Incidents after Intravenous Injections of Serum. W. Eickhoff.—p. 378.
Question of Increased Mineralization in Fracture Repair Demonstrated on Roentgenologic Examination. G. Krockert.—p. 398.

Fibroplastic Peritonitis.—Hartmann reports 4 cases of chronic fibrous encapsulating peritonitis in which operation was performed at Rieder's surgical clinic in Leipzig. The patients were from 14 to 40 years of age. Obstructive symptoms were present. At operation the small intestine was found to be involved in all cases. A part of the small intestine which was not involved was seen to enter the membrane, while another short segment of the ileum emerged, so that an afferent and efferent limb similar to a hernial sac could be distinguished. The membrane covering the peritoneum was several millimeters thick and adhered loosely to the serosa, interfering with the motility of the small intestine. Recovery resulted from excision of parts of the membrane which enclosed the small intestine. "Decortication" thus appears to be the method of choice. Enteroanastomosis performed in 2 of the 4 cases resulted in only temporary improvement. Satisfactory results persisted as late as eleven years after the operation. Genesis of this rare disease has remained obscure and its evaluation has been made difficult by the fact that many transitional types were found varying from a membrane covering intestinal loops which were not adherent to one another to a sac-like intestinal mass involving adjacent organs. Inflammation possibly played a role in the author's cases, but there were no indications as to any specific type. A certain parallelism in the localization of abdominal grip and fibroplastic peritonitis suggests that the condition may be a sequel of abdominal grip. The majority of the cases, however, have no history of a previous grip. Parietal mesenteric hernia is the only type of malformation which might be considered as a primary cause of fibroplastic peritonitis. A secondary inflammatory process may obscure the clinical picture. Total or partial enclosure of the small intestine by the mesocolon is theoretically possible and would supply an explanation for the emergence of one part of the small intestine from the hernial sac-like membrane and for the duodenal stenosis which was found on roentgenographic study of two of the author's cases. The etiologic concept of inflammation is alone not sufficient to explain the almost regular finding of a palpable tumor in the left mesogastric or hypogastric region and the regularity of the detachable membrane.

Münchener medizinische Wochenschrift, Munich

89:25-46 (Jan. 9) 1942. **Partial Index**

Psychopathologic Observations During First World War and During This War: Differences and How to Explain Them. G. Störring.—p. 25.
*Action of Carbon Dioxide in Epilepsy and Dementia Precox on Basis of Electroencephalographic Observations. A. F. Kornmüller.—p. 30.
*Agglutination on Dried Blood in Infectious Diseases and Its Employment in Epidemic and Endemic Typhus. W. Steuer.—p. 33.
Progress in Conservative Treatment of Myoma. E. Vogt.—p. 37.

Action of Carbon Dioxide on Electroencephalographic Changes in Epilepsy and Schizophrenia.—Kornmüller investigated the influence of inhalation of carbon dioxide on the electroencephalographic changes in epilepsy and in dementia precox. Patients were subjected to electroencephalography while they breathed alternately ordinary air and 5 or 3 per cent carbon dioxide in pure oxygen. These studies were made on 40 patients, most of whom had either epilepsy or dementia precox. The observations demonstrated that carbon dioxide may decrease or completely counteract the abnormal electroencephalographic manifestations of these diseases. Carbon dioxide, especially its deficiency (hypocapnia), acts directly on the brain, because it is an adequate stimulus for certain parts of the brain. Carbon dioxide increases the cerebral blood perfusion, whereas its lack reduces it. Carbon dioxide also plays a part in tissue respiration. Further investigations are necessary to determine which of the factors assumes the decisive role. The author's observations indicate that some patients with epilepsy or with dementia precox are more or less continuously, and not only during hyperventilation, in an abnormal state that can be counteracted by carbon dioxide. Electroencephalography indicates that this condition involves chiefly parts of the frontal brain which are connected with the midbrain and the hypothalamus. It is possible that these parts of the brain are diseased or that carbon dioxide represents an adequate stimulus for some of these parts. This is also indicated by the effect of voluntary hyperventilation in epilepsy. It is probable that therapeutic effects may be expected from the use of carbon dioxide in epilepsy, dementia precox and other brain diseases. The effects of metrazol, insulin and electric shock treatments may be partly due to the fact that they increase the carbon dioxide content of the brain and blood.

Agglutination Test on Dried Blood in Typhus.—Steuer describes the technic of the agglutination test for typhus using a suspension of killed proteus X19 as reagent. By using formaldehyde treated bacterial suspensions as reagents the test can be also used for typhoid, paratyphoid and dysentery. The agglutination test on dried blood provides a rapid method for systematic serologic examinations on large numbers of persons in the environment of patients with typhus in order to detect mild, atypical and unrecognized cases. The author's studies indicate that children may have typhus in a mild and unrecognized form. The same applies to young persons and even to some adults, who may have the disease in an ambulatory form. In childhood and youth there seems to exist a natural protection which decreases in adult life. This resistance differs individually. Children and young persons have been known to develop the classic form of typhus. These observations apply to people among whom typhus has long been endemic. Latent infections occur in such endemic regions. Highly positive Felix-Weil reactions are occasionally observed in persons of all ages who are not aware of having had typhus and who had not been immunized against it. The Rickettsia agglutinations performed in some of them also were positive. The author stresses that the dry blood test described is to be used for environmental examinations in order to detect all, even the mild, latent and asymptomatic cases. The ambulatory and asymptomatic cases are to be included in the isolation and delousing, since they may spread the disease.

Book Notices

Manual of Fractures: Treatment by External Skeletal Fixation. By C. M. Shaar, M.D., F.A.C.S., Captain, Medical Corps, United States Navy, and Frank P. Kreuz Jr., M.D., F.A.C.S., Lieutenant Commander, Medical Corps, United States Navy. Cloth. Price, $3. Pp. 300, with 148 illustrations. Philadelphia & London: W. B. Saunders Company, 1943.

The purpose of this book is to meet the current need for the treatment of fractures where routine methods are not practicable. It is a handbook for the surgeon interested in external fixation. The authors discuss the pros and cons involved in the use of plaster of paris, skeletal traction, balanced traction, internal fixation and external fixation. They prefer the Stader splint over others for external fixation. If the correct technic is employed with meticulous attention to detail they give assurance that the results will be gratifying. They describe the method they have used for two years. A chapter on a roentgenographic study of bone reaction and changes around pin holes and fracture sites is instructive, also a chapter on anesthesia in fracture treatment and another on shock in fractures. One of the most interesting sections is on "pin seepage," a subject that has caused much controversy. The authors have had infection from pins in 157 consecutive cases. They differentiate sharply between ordinary pin seepage and actual infection about the pin sites. A small amount of seepage occurs in about 10 per cent of cases. They caution against premature disruption of fixation especially in compound fractures, because of this contingency. Errors in treatment by external fixation are enumerated. Delayed union and nonunion are discussed. Special fractures involving the mandible, clavicle, humerus, radius, ulna, femur, pelvis, tibia, fibula and os calcis are reviewed briefly. Other sections consider compound fractures, osteomyelitis, old ununited fractures, malunion of fractures, arthrodesis of joints and bone grafts. The fractures occurring in the military services and the treatment of fractures at sea are discussed.

Psikhofiziologiya maskirovki i razvedki. [By] K. Kh. Kekcheev. [Psychophysiology of Camouflage and Disguise.] Paper. Price, 5 rubles. Pp. 108, with 11 illustrations. Moskva: Gosudarstvennoe izdatelstvo "Sovetskaya nauka," 1942.

This monograph reports studies carried out in the Moscow Institute of Psychology, dealing with the physiology and psychology of camouflage. According to the author, types of camouflage, as well as modern combat itself, are to a considerable degree determined and limited by our visual and auditory receptivity. These senses can be improved or intensified, for the purpose of observing the enemy's movements, in a number of ways, such as substituting one sense for another, resorting to the use of special apparatus, selecting men with highly developed visual or auditory senses and giving special training to these senses. One's position and maneuvering may be camouflaged (*a*) by utilization of the inadequacy of human visual and auditory acuity (this refers particularly to perception of light, color and sound), (*b*) by rapidity of movement and (*c*) by recourse to emotional factors which interfere with visual and auditory performance. The application of the physiologic method to the practice of camouflage under combat conditions is new and interesting. Unfortunately, this monograph will be largely inaccessible to our readers because it is written in Russian without the customary summaries in either English or French.

Annual Review of Biochemistry. Volume XII. James Murray Luck, Editor. James H. C. Smith, Associate Editor. Cloth. Pp. 704. Stanford University P. O.: Annual Reviews, Inc., 1943.

The annual reviews of this series are now widely known and appreciated in scientific circles. This volume contains reviews of some twenty-four subjects in the field of biochemistry. They cover a wide range of subjects such as the chemistry of the hormones, water soluble and fat soluble vitamins, mineral nutrition, the electron microscope in biology and the chemistry of viruses. Extensive bibliographies and author and subject indexes add materially to the value of the reviews.

Pye's Surgical Handicraft: A Manual of Surgical Manipulations, Minor Surgery, and Other Matters Connected with the Work of Surgical Dressers, House Surgeons, and Practitioners. Edited by Hamilton Bailey, F.R.C.S., Surgeon, Royal Northern Hospital, London. Thirteenth edition. Cloth. Price, $6. Pp. 536, with 534 illustrations. Baltimore: William Wood & Company, 1942.

The resiliency of the British as they continue to publish arouses complete admiration. This book enters its thirteenth edition during a span of nearly sixty years. Twice bombed out, it now appears in definitely improved form. The many technics and details of procedure that are casually mentioned in school and have to be learned at the bedside, often with considerable embarrassment to intern and patient alike, are well described. They range from the proper manner of putting on rubber gloves to the management of a T tube inserted in the common bile duct. Many of the descriptions are accompanied by excellent photographic reproductions and drawings to emphasize important points. The complete coverage of minor surgery and common accidents befalling the novice bespeak the many years of experience which have molded the foundations for this book. It has the added advantage of not presenting too many ways of doing the same thing. This work on surgical handicraft can benefit any intern as well as others whose work with patients is with hand as well as head.

The Modern Treatment of Syphilis. By Joseph Earle Moore, M.D., Associate Professor of Medicine and Adjunct Professor of Public Health Administration, The Johns Hopkins University, Baltimore, with the collaboration of Jarold E. Kemp, M.D., and others. Second edition, second printing, with Chapter XXXIII: Intensive Arsenotherapy of Early Syphilis, Completely Rewritten, and Chapter XXXIV: Venereal Disease Control in the Army and Navy, Newly Introduced. Fabrikoid. Price, $7. Pp. 717, with 109 illustrations. Springfield, Illinois & Baltimore: Charles C Thomas, 1943.

The need for this printing was due to the excellent reception given the book by the medical profession. It is now the outstanding book for both the practitioner and the student who is concerned with the treatment of patients who have syphilis. Two new chapters have been added: one on the new intensive measures for the treatment of early syphilis and another on the measures adopted by the military forces to control venereal disease. Apparently Moore and his colleagues did not quickly accept these newer methods of treating early syphilis, and the chapter dealing with this subject indicates certain limitations in their practical experience with the various intensive systems that recently have been recommended. The chapter on efforts at control of venereal disease among the military forces emphasizes what can be accomplished in this regard when an adequate organization, trained in this type of work, is permitted to function properly. The book portrays the author's experience at the Johns Hopkins Hospital clinic and is inclined to minimize the observations of other investigators if their results are contrary or divergent. Otherwise the book deserves recommendation to those interested in the treatment of syphilis. The format and printing are excellent.

The Practice of Local Anæsthesia. By George Bankoff, M.D., D.Ch., F.R.F.P.S., E.M.S. Surgeon, St. John and St. Elizabeth Hospital, London. New edition. Cloth. Price, 17s. 6d. Pp. 244, with 181 illustrations. London: William Heinemann, Ltd., 1943.

In addition to discussion of the use of local anesthetic agents, the author has attempted to deal with the subject of intravenous anesthesia. The style of expression is often pedantic and vague. Occasional inaccurate statements are noticeable. For example, on page 59 one reads that "10 mgm." of pentothal sodium administered in 5 or 10 per cent solution is adequate for major operations. As treatment for "respiratory toxic effects" during local anesthesia the author suggests the administration of carbon dioxide, heart stimulants and the application of artificial respiration. No reference is made to the use of oxygen. The book shows lack of familiarity with modern opinions regarding local anesthesia as well as lack of appreciation of some of the important fundamental principles involved in the satisfactory use of anesthetic drugs. The fact should be emphasized, however, that it was written in Europe, and the author may have presented matters of distinct value to the readers for whom it was intended. This book could scarcely be recommended either as a textbook for students of anesthesia in America or as a reference book for the experienced American anesthetist.

Queries and Minor Notes

THE ANSWERS HERE PUBLISHED HAVE BEEN PREPARED BY COMPETENT AUTHORITIES. THEY DO NOT, HOWEVER, REPRESENT THE OPINIONS OF ANY OFFICIAL BODIES UNLESS SPECIFICALLY STATED IN THE REPLY. ANONYMOUS COMMUNICATIONS AND QUERIES ON POSTAL CARDS WILL NOT BE NOTICED. EVERY LETTER MUST CONTAIN THE WRITER'S NAME AND ADDRESS, BUT THESE WILL BE OMITTED ON REQUEST.

BLOOD PLASMA BANK

To the Editor:—We have a blood plasma bank established in this hospital. The appearance of the plasma does not seem normal; here are our difficulties: In flask 1 the blood was taken on August 15 and aspirated on August 21. The plasma is cloudy, of medium tan color and a reddish, flocculent sediment has formed of about ½ ounce in about 400 cc. plasma. In flask 2 the blood was taken on August 9 and aspirated on August 16. The plasma here is cloudy, of a light pinkish color and a heavy, flocculent sediment, tan in color, has formed of about 1 ounce or more in 400 cc. of the plasma. We have so far ten flasks of plasma more or less turbulent. As indicated, aspiration was done about one week after collection. Sedimentation was accomplished, but without the use of a centrifuge. The specimens were first stored in a common household refrigerator at a temperature of from 30 to 35 degrees until September 26, when they were transferred to the regular blood bank refrigerator and stored at a temperature of about 40 degrees, which temperature was maintained. Is this plasma safe for blood transfusion? Is there danger of embolism? In using this plasma should only the upper portion be used and the flocculent sediment discarded? Should the whole be centrifuged (this seems most reasonable to me)? Can a centrifuge such as is used for the sedimentation of urine also be used for the sedimentation of plasma by exchanging the containers? Perhaps the change in temperature during storage or the method of sedimentation has some bearing on the peculiar appearance of the plasma. We have several donors willing to donate blood but we have postponed collection in order first to make sure that the plasma so far collected can be used safely or not. I myself prefer the administration of solution of sodium chloride or 5 to 10 per cent solution of dextrose in critical conditions. However, in order to conform with the newer methods and since I have to do some work in pathology I was consulted in regard to our recently established plasma bank. M.D., Ohio.

ANSWER.—Plasma separated after six to seven days of sedimentation at 30 to 35 F. should appear as an opalescent to cloudy, light pink fluid with a flocculent precipitate. The pinkish color is due to hemolysis, but the amount of free hemoglobin present should not exceed 4 to 8 mg. per hundred cubic centimeters. It is likely that, if the temperature of refrigeration is maintained between 35 and 40 F., the amount of hemolysis will be less than previously obtained.

The flocculent sediment is due mostly to fibrinogen precipitation, which occurs in both citrated blood and in plasma, especially if maintained at refrigerator temperature. Plasma separated by aspiration from such material would not be safe for transfusion because of danger of embolism. It can, however, be readily made safe by filtration through any of the filters capable of retaining small particulate matter. Four layers of 40 mesh gauze thoroughly boiled in pyrogen free distilled water, dried rapidly and properly sterilized, or a 200 mesh single layer stainless steel filter, are suitable for this purpose. The flocculent material can also be readily removed by centrifugation, but unless the centrifuge is of large capacity this procedure would prove lengthy and expose the material to danger of bacterial contamination.

It appears strongly desirable to check the sterility of the plasma after separation. In any case the filtration of the plasma should be resorted to immediately before administration. The administration of solution of sodium chloride or 5 to 10 per cent solution of dextrose cannot in any way take the place of plasma transfusion.

VIRUS ETIOLOGY OF INFECTIOUS MONONUCLEOSIS

To the Editor:—I request information concerning the virus etiology of acute infectious mononucleosis. Lieutenant Colonel, M. C., A. U. S.

ANSWER.—There have been frequent unsubstantiated references to viruses as possible etiologic agents in infectious mononucleosis but extremely little experimental data. The latest report, a series of three articles by L. van den Berghe and his associates (*Compt. rend. Soc. de biol.* **130**:279, **131**:156, **132**:90, 1939), claims production of the disease in Macacus rhesus inoculated subcutaneously with blood of a child afflicted with infectious mononucleosis, and subsequently serial transmission from monkey to monkey by means of Seitz filtrates. The virus was kept alive in a medium suitable for filtrable viruses at least during ten transfers. Inoculation of the fifth and tenth transfers into 1 Macacus rhesus resulted after fourteen and twenty-five days in hematologic and serologic (heterophilic antibody tests) changes in 2 animals which satisfied the authors as proving successful transmission of the disease. Temperature of minus 15 degrees C. for from thirty to thirty-five days did not destroy the virus.

The report, though interesting, is sorely in need of confirmation, especially in view of two facts: 1. The hematologic data as recorded for the animals and even for the patient, the original source of the virus, are not in full agreement with what some authorities consider characteristic for the disease. 2. It is not stated whether the heterophilic antibodies have been tested for specificity for infectious mononucleosis with the so-called differential test (Davidsohn, Israel: Serologic Diagnosis of Infectious Mononucleosis, THE JOURNAL, Jan. 23, 1937, p. 289). Other reports of successful transmission have been published, but they have no bearing on the question of virus etiology.

MONKEY NOMENCLATURE

To the Editor:—In an editorial on poliomyelitis on page 1250 of The Journal of Aug. 28, 1943 reference is made to cynomolgus monkeys. I note that some of the material produced symptoms in these but not in other types of monkeys. I should like a little information clarifying what is meant by the term "cynomolgus," and what features identify these as different from other species. I have checked in Webster's New International Unabridged Dictionary, Stedman's Medical Dictionary, Dorland's Medical Dictionary, the Oxford English Dictionary, Parker and Haswell, 6th edition, Textbook of Zoology, and have inquired at the city library but have been unable to find even the word "cynomolgus." As this word is commonly used in medical literature and has been for many years, it seems to me important to have some identifying features firmly established so that one may be certain that research workers who are using animals of this species are being uniform in their identification.

Lyle A. Weed, M.D., Indianapolis.

ANSWER.—According to the Encyclopedia Britannica, 14th edition, volume 18, page 488, the macaques are among the most generally adaptable of monkeys. . . . They are usually omnivorous, and the crab eating macaque of India lives chiefly on Crustacea. They have fore and hind limbs of about equal length. Prominent examples are Macacus rhesus, the common rhesus monkey, Macacus cynomolgus, the crab eating macaque, Macacus sinicus, the bonnet monkey, Macacus silenus, the lion tailed macaque, all of India, and Macacus speciosus, the red faced monkey of Japan. According to other sources of information it seems that the nomenclature of all macaques and related monkeys is in a state of great confusion. The name Macacus cynomolgus no longer applies to any species, but the monkey in question is undoubtedly Macaca irus of the East Indian region. It is also known as the "crab eating" or "long tailed macaque" and can be recognized at once by its long tail; no other macaque of this region has a tail longer than the body. It is probably as well to use the common English name until the taxonomy of the group has been more thoroughly investigated.

SERUM FOR TESTING FOR Rh FACTOR

To the Editor:—Please inform me as quickly as possible where I can obtain serum for testing for the Rh factor and also the technic.

Milton Semoff, M.D., Albuquerque, N. M.

ANSWER.—Reliable serum for testing for the Rh factor can be obtained from the Blood Transfusion Association of New York City or from the Certified Blood Donor Service of Jamaica, N. Y.

Detailed directions as to the technic of the tests can be found in:

Todd, J. C., and Sanford, A. H.: Clinical Diagnosis by Laboratory Methods, ed. 10, Philadelphia, W. B. Saunders Company, 1943.
Wiener, A. S.: Blood Groups and Transfusion, ed. 3, Springfield, Ill., Charles C Thomas, 1943.
Wiener, A. S.: Hemolytic Transfusion Reactions: III. Prevention, with Special Reference to the Rh and Cross Matching Tests, *Am. J. Clin. Path.* **12**:302 (June) 1942.

DICHLOROACETIC ACID FOR WARTS

To the Editor:—In the issue of The Journal for Sept. 25, 1943, the answer to the question "Dichloroacetic Acid versus Trichloroacetic Acid for Warts" does not answer the question asked. The inquirer asked specific questions surrounding the use of bichloroacetic acid as an agent in the treatment of warts. The answer gives a good cost analysis and the results of an experiment when using bichloroacetic and trichloroacetic acid on normal skin, but it does not answer the efficacy of one over the other of these compounds when used on warts. I was interested in this inquiry since Dr. E. J. Kocour and I have used bichloroacetic acid in the treatment of warts on more than 50 college students when we were associated with the Chicago city colleges. It was our impression that bichloroacetic acid is less painful and more slow acting on the overgrowth of epidermal tissue than the trichloroacetic acid and for this reason it seems to have a slight edge of usefulness over the trichloroacetic method of eradication of warts. The wart is slowly disintegrated and dissolved, possibly by catalytic action, by bichloroacetic acid and the usefulness of the part treated is in no way hampered. Some obstinate cases take rather prolonged treatment and application of the acid every other day for several weeks, but in general Dr. Kocour and I secured rather beneficial results with this type of treatment. L. G. Lederer, M.D., Washington, D. C.